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**REVISION OF THE SPECIES OF APION OF AMERICA  
NORTH OF MEXICO.**

BY H. C. FALL.

The present essay is the second attempt to treat systematically the species of *Apion* occurring within our faunal limits, the first having been presented by Prof. John B. Smith—Trans. Am. Ent. Soc., 1884. For various reasons, chief among which perhaps are the brevity of the descriptions and the failure to recognize sexual characters, this paper has not proved as useful as was hoped; and on undertaking the study about a year ago, it was found that with the exception of the material in the collections of Drs. LeConte and Horn, and the National Museum, which had served as the basis of the paper referred to, there was scarcely a collection in the country which evinced more than a half hearted attempt at specific separation, to say nothing of subsequent identification. Thus the time seems ripe for a complete revision of the genus, and a study which was begun for the sole purpose of separating the local material in my cabinet has expanded until upward of four thousand individuals have been examined, including, in most cases, the entire material of Drs. Horn, Hamilton and Dietz, Messrs. Hubbard, Schwarz, Blanchard, Wickham, Liebeck, Fuchs, Leng, Bowditch, Capt. Casey and the National and Cambridge Museums.

To all the above-named gentlemen I desire at the outset to express my appreciation of their most cordial response in the way of material. I am, moreover, especially indebted to Dr. Horn and Messrs. Blanchard and Schwarz for bibliographical assistance and much kind advice and encouragement; also to Messrs. Henshaw, Howard and Linell for many courtesies extended during my visits to the Cambridge and Washington Museums.

It need hardly be said that the task has been far from an easy one, and none perhaps will realize its shortcomings more fully than myself; yet it is hoped that the results constitute at least a step toward a more exact knowledge of these interesting though much neglected insects, and that the employment of characters which have been found useful in the very large material before me will enable the student, who possesses experience, tact and a fair series of specimens, to place with reasonable certainty whatever comes before him.

The number of new forms described in the following pages is sensibly equal to the number of old names retained as valid, and raises the total number of species to above one hundred. Large as this total seems, it is still less than half the number catalogued from the European fauna. We may infer from this that a considerable number of new forms remain to be discovered, though it is likely that when all are known we shall still fall far short of Europe in this respect.

As an example of the richness of the European fauna: from the Netherlands alone—a bit of country about equal in area to the State of Maryland, and far less diversified in surface—Everts\* records no less than eighty-seven species; while Bedel † enumerates ninety-seven as inhabiting the basin of the Seine.

The country about Washington, D. C., has doubtless been as thoroughly explored as any limited area in the United States, and here an area equal in size to the Netherlands, which would include the country within a radius of about sixty-five miles of the city, shows only twenty-five species.

Not only are our species less numerous, they are also smaller on the average, and lack entirely the brighter tints which adorn not a few of their trans-Atlantic cousins.

Before proceeding to a statement of generic characters, it seems appropriate to pass briefly in review, in chronological order, the species described up to the present time:

1797. Herbst-Käfer, VII, described *nigrum*.  
 1826. Say, Jour. Acad. Nat. Sci. Phila., described *rostrum*, and in 1831—Curc. — *segnipes*. Both are well-known species.  
 1833. Gyllenhal, Sch. Curc., I, redescribed *rostrum* Say under the name *sayi*.  
 1839. Boheman, Sch. Curc., V., described *pennsylvanicum* and *portatum*. The former is somewhat doubtfully, and the latter certainly recognized.  
 1839. Gyllenhal, Sch. Curc., V, *reconditum*, not recognized.  
 1843. Mannerheim, Bull. Mosc., described *troglydytes* and *cuprescens*. The latter species, described from Alaska, has not yet been proved identical with any known to us, but there are reasons for believing it to be the æneous form of the species later described by LeConte as *proclive*.

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\* Budrage tot de Kennis der Apioniden-Tydschrift voor Entomologie, 1878.

† Faune des Coléoptères du Bassin de la Seine.

1854. Gerstaecker, Stett. Ent. Zeit., described many species from both North and South America. Among them the following are credited to our fauna: *cinereum*, *melanarium*, *metallicum*, *nodirostre*, *subglobosum* and *vile*. Of these, *cinereum* is Say's *segnipes*; *melanarium* is doubtfully recognized; *metallicum*, suppressed by Smith as a synonym of *troglydites* Mann., but erroneously, as I believe, is now restored; *nodirostre*, *vile* and *subglobosum* are still unknown. It is more than likely that the last named species was not taken within our faunal limits.
1857. LeConte, Pac. R. R. Expl. and Surv., described *cavifrons*, *crassinasum*, *cribricolle*, *proclive* and *protensum*. *Crassinasum* and *proclive* are the sexes of the same species; *protensum* is still unique.
1858. LeConte, Proc. Acad. Nat. Sci. Phila., adds *ædorhynchum* and *ventricosum*.
1867. Walsh, Proc. Ent. Soc. Phila., described *lanuginosum*. This name being preoccupied was changed by Smith to *walshii*.
1884. Smith, Trans. Am. Ent. Soc. Phila., adds 48 species, of which 12 have been by himself, or are in the following pages, reduced to synonymy, viz.:

<i>erythrocerum</i>	= <i>pennsylvanicum</i>
<i>estriatum</i>	= <i>erraticum</i> ♀
<i>ovale</i>	= <i>obsoletum</i> ♀
<i>obesum</i>	= <i>robustum</i> ♀
<i>parvulum</i>	= <i>minutum</i>
<i>californicum</i>	= <i>sordidum</i> var.
<i>concoloratum</i>	= <i>carinatum</i>
<i>brevicolle</i>	= <i>cribricolle</i> Lec.
<i>capitatum</i>	= <i>oblitum</i>
<i>typicum</i>	= <i>ventricosum</i> Lec.
<i>vicinum</i>	= <i>walshii</i>
<i>fraternum</i>	= <i>griseum</i> .

184. Casey, Bull. Brook. Ent. Soc., described *vespertinum*. This is shown farther on to be the same as *californicum*.
1887. Smith, Entom. Americana, described *lividum*.

For a statement of the characters of the genus the student is referred to the "Classification."

The production of the interior angle of two or more pairs of tibiæ of the male in many species into a more or less developed spur or

muero; and the metasternum as short, or shorter than the first ventral segment, with the accompanying rudimentary wings in a few others, may be set down as exceptions to the characters there given.

In addition, it may be said that the beak varies greatly in length, form and sculpture. It is usually about as long as the head and prothorax, but varies from scarcely as long as the thorax (*emaciipes*) to more than half the length of the entire body in certain females of *varicorne*, *coloradense* and *pennsylvanicum*. The eyes are generally more or less broadly elliptical in shape with the longest diameter a little oblique to the vertical, but are sometimes nearly circular, and in one species (*persimile*) they are obviously narrowed inferiorly. The granulation also varies somewhat in coarseness and convexity, but has not been used at all for specific separation, and is but once or twice alluded to in the descriptions. The width of the front between the eyes, whether greater than the width of the beak at tip, as is usual, or less, as is occasionally the case, has been used with advantage. The place of insertion and relative lengths of the basal joints of the antennæ are quite variable, and have been largely used in the scheme which follows. The point of insertion is never beyond the middle, usually much nearer the base, and in a few species quite close to the eyes—(*perminutum*, *propinquicorne*, etc.). It has been found more convenient to indicate this distance by stating which joint of the antennæ reaches the eye; or more properly, which joint would reach the eye if the antennæ could be directed against it. The first joint may be very little longer than the second, or it may be equal to or even exceed the three following in length. The second is always as long, usually a little longer than the third; the succeeding joints are gradually shorter, but it is not often that the outer joints become transverse.

The prothorax is usually more or less transverse with sides rounded between the generally evident apical and basal contractions. The variations here, as well as in the form of the elytra, can best be appreciated by referring to the accompanying plates. The abdominal punctuation is very variable, and with a little experience is quite useful, especially in the first section of the genus. The third and fourth ventrals are, as a rule, impunctate, or with but a few small punctures toward the sides. Unless otherwise stated, by abdominal punctuation, or simply "punctuation beneath," is meant that of the first two segments.

The legs vary in length, and through all degrees from stout to slender. The front tibiæ are always more or less distinctly longer than the others, the middle tibiæ being the shortest of the three. The first tarsal joint is usually from two to three times as long as wide; very rarely (*xanthoxyli*) as wide as long; the second and third joints are less elongate, and the last projects to a variable degree beyond the lobes of the third.

In the majority of species the sexes are well differentiated, but in a considerable number scarcely at all so. The parts sexually modified are the beak, antennæ, elytra, metasternum, coxæ, femora, tibiæ and tarsi, all of which are referred to in the proper places. In general, when both sexes are present, the males may be distinguished by the shorter, more coarsely sculptured beak; and in the vast majority of specimens the position of the tip of the abdomen will reveal the sex—this being visibly deflected in the male, and more or less retracted in the female. The very frequent rounding of the sutural angles of the elytra in the male, combined with the deflection mentioned, usually exposes the small terminal dorsal segment which is always present in this sex. In a few species—e. g. *herculanum*—the abdomen is, in my experience, always more or less retracted at tip, and the presence of the additional segment can only be determined by removing an elytron.

The chief characters employed by Wencker and other European writers in the arrangement of their species seem to have been the beak—form and length,—claws, insertion of antennæ, color and vestiture, in about that order. With the exception of the form of the claws, I have been unable to use any of these characters for the larger subdivisions of our series. In their stead I have drawn to a considerable extent upon the sexual characters, as seeming to afford a more natural as well as more definite basis for grouping the species. Prof. Smith in his synopsis says: "The tarsal claws seemed at first to offer the most natural division, but while a large part of the species have the claws dentate in both sexes, and a few seem to have them simple in both sexes, there are some species in which the males have the claws toothed, while the females have them simple." I have in my study been quite unable to detect any appreciable sexual differences of this nature, and am forced to conclude that the supposed sexes of one species were really individuals of different species.

It may be of interest to say in this connection, that in specimens of the European *ulicis* and *fuscirostre* before me I do note a sexual

difference in the claws—these being strongly toothed in the female and nearly simple in the male—a fact peculiar in itself, and one which is not mentioned in any European literature to which I have had access.

While the form of the claws as a primary means of division does not, I am sure, result in a perfectly natural arrangement, there would appear to be no other which can be so satisfactorily used, and the few species which now seem out of place will have to wait until a more rational scheme can be devised.

I have endeavored to make the descriptions following as full as need be in all essential matters, without rendering them unnecessarily prolix by the introduction of a mass of details, which are either so constant in large numbers of species, or so subject to individual variation as to serve no useful purpose. In measurement of length the beak is always excluded. By the dilation of the beak is always meant the expansion over the insertion of the antennæ as seen from above. The term mucronate has been uniformly used in referring to the armature of the male tibiæ, though it is possible that the term unguiculate would have been more appropriate in some instances.

Following lines already indicated, our species are primarily divided into four sections, as follows :

Claws simple or nearly so.

Anterior femora of the ♂ more or less swollen or tuberculate and with a polished area toward the tip.....I.

Anterior femora of ♂ unmodified.....II.

Claws evidently toothed near the base.

Tibiæ of ♂ wholly or in part mucronate at tip.....III.

Tibiæ of ♂ unarmed at tip.....IV.

A few of the species in Section II have the claws of such a shape as to occasion some doubt as to the series in which they should be placed; should the student fail to locate his species in the series with toothed claws, he would do well to revert to Section II before giving up the search.

## I.

The members of this series form a natural group, probably of subgeneric value, and, so far as known, peculiar to our fauna. In general facies certain species are in a few instances rather closely paralleled by members of one or another of the other sections; from all these, however, the sexual characters sharply separate them. The form is generally slender, the pubescence sparse or nearly

wanting, the surface more shining than usual. The intromittent organ of the male is subcylindrical, blunt, and rounded at the tip instead of flattened, and rather suddenly acuminate, as in the other sections.

Sexual differentiation here reaches its greatest development. In the male the beak is shorter, dilated at the base, and more strongly sculptured. The first joint of the antennæ is generally shorter, the second bears near the base, on the upper side, several closely-placed, minute setæ, which, under moderate power, have the appearance of a small denticle. The front thighs are more or less swollen or tuberculate on the inner face toward the tip; the inferior, and to a greater or less extent, the lateral surface of the swelling is polished, the polished area being often marked by parallel longitudinal striæ, which differ in coarseness and approximation in the different species. The thigh is usually distinctly longitudinally concave or grooved beneath at the tip, the concavity limited externally by a more or less well-defined ridge. The femoral swelling becomes nearly or quite obsolete in a very few species, but the polished area beneath is always evident. The front tibæ are rather suddenly though not very strongly widened at about the basal fourth, the middle and the hind tibæ are armed at the tip with a small mucro which is frequently almost concealed by the terminal spinules. The metasternum bears, near the middle of the posterior margin, two rather distant, small, acute tubercles or spinules, which are sometimes faintly indicated in the female.

The tips of the elytra are frequently conjointly produced into a more or less prominent lobe in the female.

This group has proved by far the most troublesome of the four, and I cannot reasonably hope to have discovered in all cases the true specific limits. It is quite possible that the sexual characters used are not as constant as they are assumed to be, and only the patient study of accumulated examples from carefully recorded localities can remove the doubts which must accompany any arrangement based on the limited material now in collections.

Of four species—*protensum*, *atripes*, *anceps* and *quadricolle*—females only have been seen; these species must, therefore, be considered as tentatively placed for the present.

The following table is the best I am now able to offer :

Front thighs with a conspicuous tubercle in the ♂.....	1.
Front thighs (♂) merely swollen toward the tip.....	4.
Front thighs (♂) not or scarcely perceptibly enlarged.....	5.



1. Abdomen coarsely closely punctate (Pl. 2, fig. 12).....2.  
 Abdomen much more finely sparsely punctate (Pl. 2, fig. 13).....3.
2. Size large—2 mm. or over.  
 Prothorax with base and apex subequal.  
 Prothorax longer than wide.....1. **erraticum**.  
 Prothorax as wide as long.  
 Humeri evident, body more parallel, less convex, legs rufous.  
 2. **impeditum**.  
 Humeri absent, body more ovate, more convex, legs black.  
 3. **quadricolle**.  
 Prothorax with base noticeably wider than the apex.  
 Stout, sides of prothorax not prominent at the middle, elytra widest at the middle.....4. **protensum**.  
 More slender, sides of prothorax rather prominent at the middle, elytra widest behind the middle.....5. **impunctistriatum**.  
 Size small, always less than 2 mm.  
 Prothorax longer than wide, densely punctate, legs black.  
 6. **coracellum**.  
 Prothorax as wide as long, sparsely punctate, legs and antennæ red.  
 7. **anceps**.
3. Prothorax wider than long, sides arcuate, body robust.....8. **atripes**.  
 Prothorax longer than wide, body more slender  
 Polished area of anterior femora (♂) plainly longitudinally strigosa.  
 Anterior tibiæ (♂) strongly widened apically.....9. **finitimum**.  
 Anterior tibiæ (♂) slightly wider in apical three-fourths....10. **virile**.  
 Polished area of anterior femora (♂) nor strigose or with the striæ few and inconspicuous.  
 Humeri moderate.  
 Infra limiting ridge of anterior femora (♂) strong....11. **melanarium**.  
 Infra limiting ridge feeble or absent.  
 Very narrow, size small, less than 2 mm.....12. **floridanum**.  
 More robust, size large, 2.5 mm.....13. **robustum**.  
 Humeri wanting.....14. **obsoletum**.
4. Beak short, dilated at base and almost completely shining beyond the dilation in both sexes.....15. **ellipticum**.  
 Beak of female not dilated at base.  
 Size small, seldom exceeding 1.5 mm.  
 Legs and antennæ rufous, beak (♂) stouter, humeri wanting or but faintly indicated.....16. **desolatum**.  
 Legs black, or at most rufo piceous, beak (♂) more attenuate.  
 Humeri wanting.  
 Beak sinuate toward the base, intervals flat, abdomen nearly impunctate.  
 17. **sinuirostrum**.  
 Beak as usual, intervals more or less convex, abdominal punctures coarse and numerous.....18. **molestum**.  
 Humeri distinct.  
 Larger, body more ovate and more longitudinally convex, beak longer.  
 19. **minutum**.  
 Smaller, body more parallel, less convex, beak shorter.....20. **texanum**.  
 Size larger, seldom less than 2 mm.....21. **pennsylvanicum**.

## 5. Humeri present.

Elytral intervals convex, surface opaque.....22. **funereum.**Elytral intervals flat, surface somewhat shining.....23. **occidentale.**Humeri wanting.....24. **hesperum.**

1. **A. erraticum** Smith.—Very narrow, convex, black; legs sometimes rufopiceous; pubescence sparse. Beak ( $\delta$ ) rather strongly curved, subequal to the head and prothorax; ( $\varphi$ ) a little more slender and nearly one-third longer, not dilated, strigose, except in apical third ( $\delta$ ), or even half ( $\varphi$ ), which is polished; punctuation sparse but distinct. First antennal joint equal to the next two ( $\delta$ ) or a little longer ( $\varphi$ ), third joint much more slender, but nearly or quite as long as the second, and about one-half longer than the fourth. Front barely wider than the tip of the beak, canaliculose; eyes not very prominent. Prothorax longer than wide; base not wider than the apex; sides feebly arcuate, a slight sinuation before the base; surface closely not coarsely punctate; dorsal line distinct but never complete. Elytra very narrow, sides parallel; humeri small, oblique; intervals flat, not twice as wide as the striæ. Beneath strongly, moderately, densely punctate; legs long, rather thin; claws with a very small, obtuse tooth. Length 1.9-2.3 mm.; .08-.09 inch. (Pl. II, figs. 1 and 1a).

$\delta$ . Sutural angles less prominent, but scarcely rounded; second joint of antennæ setiferous; anterior tibiæ more suddenly and more strongly widened; femoral tubercle strong, rounded; smooth area with fine, distant striæ; limiting ridge absent. Middle and hind tibiæ mucronate. Metasternal spicules long.

$\varphi$ . Sutural angles more prominent, but not prolonged; other parts unmodified.

*Hab.*—Texas.

Taken by Mr. Schwarz at Columbus, and at Luling, a little west, by both Mr. Wickham and myself. Two specimens in the National Museum collection are labelled Montana.

2. **A. impeditum** n. sp.—So like the preceding in size, outline and sculpture that a statement of the chief points of divergence will be sufficient for its recognition. The beak is a little stouter and less elongate, especially in the female. The antennæ are less slender, the eighth joint being at least as wide as long. Prothorax very little if at all longer than wide; dorsal line nearly complete; humeri a little less oblique. Tarsi stouter; second joint as wide as long; always noticeably longer than wide in *erraticum*. Surface less shining, legs more evidently rufous. The sexual characters are the same as in *erraticum*, except that the femoral tubercle is less developed. (Pl. II, fig. 4).

*Hab.*—New York (Peekskill), District of Columbia.

A single male in my own collection from the former and two females from the latter locality are all that I have seen. In one of the females the surface is decidedly rugulose and subopaque. In the single male the first antennal joint is shorter than in males of *erraticum*.

3. **A. quadricolle** n. sp.—Entirely black, not very shining. Beak cylindrical, strongly arcuate, a little longer than the head and prothorax ( $\varphi$ ). First antennal joint barely equal to the two following. Front subcanaliculose and punctate; eyes moderately prominent. Prothorax quadrate, base and apex

equal; sides parallel, scarcely at all prominent at the middle; dorsal line nearly complete. Elytra strongly, longitudinally convex; humeri entirely wanting; sides evenly arcuate; intervals flat, twice as wide as the striæ. Length 2 mm.; .08 inch. (Pl. II, figs. 2 and 2a).

Described from a single female from Mississippi in Mr. Wickham's collection. Again closely allied to *erraticum* and agreeing with it in such points of detail as are not mentioned in the above short description. It is, however, clearly distinct by its shorter, much more longitudinally, convex elytra, complete absence of humeri and square thorax.

4. **A. protensum** Lec.—Black, sparsely pubescent. Beak moderately arcuate, a little longer than the head and prothorax, strigose and moderately coarsely but somewhat vaguely punctate throughout its length. First joint of antennæ as long as the next two, united; second scarcely reaching the eye. Eyes not very prominent. Prothorax a little longer than wide, the base distinctly wider than the apex; sides very feebly arcuate and subparallel in basal two-thirds; surface rather densely punctate; dorsal line nearly complete. Elytra regularly oval, widest almost exactly at the middle; humeri scarcely evident. Abdomen coarsely, deeply, closely punctate. Length about 2 mm.; .08 inch.

*Hab.*—California (San Francisco).

This species is represented only by the type in the LeConte cabinet, from which the above short diagnosis is drawn. It is a female and has the tips of the elytra somewhat produced. It is one of a small number of species having the abdomen coarsely, closely punctate, from all of which the characters in the table should readily separate it. The form of the elytra—widest at the middle—is an unusual character in this group.

5. **A. impunctistriatum** Smith.—Elongate, black, shining; pubescence almost wanting. Beak (♂) a little shorter than the head and prothorax, moderately stout for this section, not strongly arcuate, cylindrical, noticeably dilated at basal third, strigose and with a few fine punctures, except at the apex, which is more or less polished; (♀) much longer, very slender, not dilated. Antennæ slender, first joint equal to the next two (♂), or three (♀), second, third and fourth joints very slightly decreasing in length; second reaching the eye. Front more or less canaliculose; eyes rather prominent. Prothorax longer than wide; base a little wider than the apex; sides moderately dilated at the middle; dorsal line complete; punctuation moderately dense. Elytra rather broadly ovate, widest near the middle; humeri and posthumeral sinuation well marked; intervals flat or nearly so, twice as wide as the striæ. Beneath coarsely, closely punctate. Length 2-2.2 mm.; .08-.09 inch. (Pl. II, figs. 3, 3a, 5 and 19).

♂. Sutural angles rounded, second antennal joint setiferous; anterior tibiæ more suddenly widened; femoral tubercle prominent; smooth area closely striate; limiting ridge not very strong; middle and hind tibiæ with small mucro; metasternal spicules moderate.

♀. Sutural angles produced; other parts unmodified.

*Hab.*—Western Pennsylvania (Hamilton), Ohio, Illinois, Texas.

The humeri vary somewhat in prominence, and in many examples the sutural stria is more strongly impressed. The trivial name is misleading. There is indeed considerable variation in the depth and approximation of the stria punctures in different species, but there is no species in which they are not plainly visible.

6. **A. coracellum** n. sp.—Moderately slender, entirely black, more or less bronzed; pubescence fine and very sparse. Beak (♂) a little shorter than the head and prothorax, stouter in basal third, nearly parallel and slender beyond the insertion of the antennæ; shining in apical two-fifths; a vague sulcus over the antennæ; punctuation fine and sparse; (♀) much longer, very slender, not dilated, smoother. First antennal joint as long as the next three, second about reaching the eye. Front punctate and subcanaliculose; eyes rather small, a little more prominent in the male. Prothorax a little longer than wide, cylindrical; sides slightly prominent at the middle; surface rather densely not coarsely punctate; dorsal line nearly complete. Elytra of the usual form; humeri rather small but prominent; posthumeral sinuation well marked; intervals flat. Beneath rather densely, moderately, coarsely punctate; claws nearly simple. Length 1.6 mm.; .065 inch.

♂. Sutural angles rounded; femoral tubercle not very prominent; smooth area not striate; limiting ridge moderate; other characters as usual.

♀. Sutural tips very slightly prolonged.

*Hab.*—District of Columbia.

Very few specimens seen, and all from one locality. It superficially resembles several others, and without especial care might easily be confounded with specimens of *texanum* and *minutum*, in which the abdominal punctuation is closer than usual. *Texanum* is always smaller and more slightly built, and *minutum* has the elytra noticeably shorter and more ventricose, while both have the prothorax less densely punctate, and the anterior femora of the male less prominently swollen.

7. **A. anceps** n. sp.—Black, legs and antennæ rufous; pubescence almost wanting. Beak (♀) subequal to the head and prothorax, slender, moderately arcuate, not dilated, finely sculptured, scarcely punctate, tip smooth. First joint of antennæ about equal to the two following, third scarcely longer than the fourth, second reaching the eye. Front with three rows of confluent punctures; eyes prominent. Prothorax slightly wider than long, widest slightly behind the middle; apical and basal constrictions evident; dorsal line nearly complete; punctures large, rather shallow, not closely, rather unevenly distributed. Elytra narrow; humeri small but evident; striæ shallow with widely-spaced punctures; intervals flat. Beneath coarsely, rather closely punctate; claws with a small tooth. Length 2 mm.; .08 inch.

*Hab.*—Illinois.

Described from a single female sent by Mr. Blanchard, who

kindly allows me to retain the type. It seems so very different from anything else that I have ventured a description in the absence of the male.

8. **A. atripes** Smith.—Very robust for this section: entirely black without aeneous lustre; pubescence almost wanting. Beak (♀) a little shorter than the head and prothorax, slender, cylindrical, rather strongly arcuate, finely strigose, except toward the apex; punctuation fine, sparse. First antennal joint as long as the next two, third distinctly longer than the fourth, second reaching the eye. Front canaliculate; eyes very prominent. Prothorax wider than long; sides arcuate, moderately, closely punctate; median line nearly complete. Elytra less than half longer than wide; humeri moderate, post-humeral situation not evident; sides slightly divergent to the middle; striæ moderate; intervals nearly flat, twice as wide as the striæ. Beneath rather finely not closely punctate. Legs not very slender; claws nearly simple. Length 1.8 mm.; .07 inch. (Pl. II, fig. 18).

*Hab.*—District of Columbia, Virginia, Georgia.

Single females from each of the above localities in the collections of Mr. Schwarz, Dr. Horn and myself are all that I have seen of this apparently rare species. Smith cites also California, but, I have no doubt, erroneously. In the absence of the male this species is doubtfully assigned to the group with prominently tuberculate femora. The large thorax, short elytra, short slender beak (♀) and very prominent eyes will make it always easily recognizable.

Since the above was written I have seen in the LeConte collection a fourth example, also a female, from Florida. In this last the feet are brownish.

9. **A. finitimum** n. sp.—Elongate, black; legs sometimes piceous brown; elytra with faint violaceous lustre; pubescence almost wanting. Beak (♂) barely as long as the head and prothorax, moderately curved, strongly almost angularly dilated, a little more slender beyond the dilation; surface finely, rather sparsely punctulate, polished in about apical half; (♀) much longer, very slender, cylindrical, not at all dilated, almost entirely polished. First joint of antennæ about equal to the next two (♂) or three (♀), third joint reaching the eye. Front canaliculose; eyes moderate. Prothorax as wide at the middle as long; base a little wider than the apex; sides rather more than usually prominent at the middle; punctuation rather fine and close; dorsal line nearly complete; humeri evident; elytra not strongly widened at the middle; striæ moderate; intervals rather wide, flat. Beneath finely, rather sparsely punctate; claws merely thickened at the base. Length 1.8-2 mm.; .07-.08 inch. (Pl. II, figs. 6 and 15).

♂. Sutural angles rounded; second joint of antennæ triangular when viewed laterally, setiferous; femoral tubercle prominent, rounded; smooth area with rather close, slightly irregular striæ; limiting ridge strong; anterior tibiæ very strongly dilated; other parts as usual.

♀. Sutural tips slightly produced.

*Hab.*—Massachusetts (Cambridge), District of Columbia, Michigan (Port Huron).

Collections of Dr. Horn, Hubbard, Schwarz and the National Museum.

The sexes are more strongly differentiated than in any other species known to me. When males are at hand the strongly dilated front tibiæ will make this species easily recognizable among an otherwise difficult group.

10. **A. virile** n. sp.—Form narrow, entirely black; pubescence very sparse and fine, but quite evident in well-preserved specimens. Beak (♂) not very slender, shorter than the head and prothorax, moderately dilated, scarcely more slender beyond the dilation than at the base; surface finely strigose, scarcely visibly so toward the tip, which is shining; punctures fine and sparse. First joint of antennæ barely as long as the next two, second and third subequal in length, third evidently longer than the fourth. Front canaliculose; eyes not very prominent. Prothorax a little longer than wide; base very little wider than the apex; sides somewhat prominent at the middle; surface rather finely, not closely punctate; impressed line nearly complete. Elytra narrow, fully three-fourths longer than wide; humeri moderate, post-humeral sinuation feeble; sides feebly diverging to the middle. Beneath sparsely, finely punctate; legs moderate; claws with merely an obtuse angulation at the base. Length 2-2.3 mm.; .08-.09 inch.

♂. Sutural angles rounded; second antennal joint setiferous; femoral tubercle prominent, closely striate throughout its lateral face; anterior tibiæ rather abruptly but not strongly widened and parallel in apical two-thirds, mucro of middle and hind tibiæ minute; metasternal spicules small.

♀. Not seen.

*Hab.*—Colorado (Greeley).

Two males taken by Mr. Wickham.

11. **A. melanarium** Gerst.—Elongate, black, shining, sometimes with faint, æneous lustre; pubescence very sparse and inconspicuous. Beak (♂) scarcely as long as the head and prothorax, nearly cylindrical, moderately dilated, finely sculptured and punctulate, smoother toward the tip; (♀) longer and more arcuate, very slender, not dilated, smoother. First joint of antennæ subequal to the next two (♂), seldom as long, and never longer than the next three (♀). Front rather narrow, slightly depressed, canaliculose; eyes moderate. Prothorax longer than wide; sides very feebly diverging from apex to base, more or less prominent at the middle; surface rather finely, usually not very closely punctate; impressed line nearly or quite complete. Elytra narrow, nearly twice as long as wide, widest at the middle; humeri moderate, post-humeral sinuation evident; striæ moderate; intervals nearly flat, about twice as wide as the striæ. Beneath finely, sparsely punctate; legs slender; claws nearly simple. Length 1.7-2.2 mm.; .07-.09 inch. (Pl. II, figs. 7 and 22).

♂. Femoral tubercle very prominent; smooth area, not or scarcely striate; limiting ridge strong; sutural angles rounded; other characters as usual.

♀. Tips of elytra moderately produced.

*Hab.*—Massachusetts, Long Island, District of Columbia, Pennsylvania, Canada, Michigan, Illinois, Iowa, Kansas, Texas.

For the present I have placed here two or three small examples from Florida, which differ only in the absence of the femoral ridge. It is more than likely that they are distinct, but I am unwilling to separate them on this character alone without more abundant material. It is quite certain that Gerstaecker had before him a member of the present group, but as no sexual characters are mentioned his description applies about equally well to any one of several species. The locality named—North America—is a trifle too indefinite to offer any clue, but as his type is, without much doubt, from the Eastern United States, I have selected the above species as the one—all things considered—he is most likely to have had in hand.

As here defined, *melanarium* is one of a group of species so closely resembling one another superficially that in the absence of sexual characters their proper separation has hitherto been impossible. These are *melanarium*, *pennsylvanicum*, *impunctistriatum* and *virile*. Of these, the first three are to be found in the Eastern United States. *Impunctistriatum* may always be known by the coarsely, densely punctate, ventral surface. Its range is also less northern and eastern than the other two; Northern Illinois and Western Pennsylvania being the limits so far as known in these directions. Both *melanarium* and *pennsylvanicum* are rather common in the Northeastern States, the former occurring westward to Iowa and Texas, and the latter extending entirely across the continent toward the northern boundary and down either coast to Florida and So. California. In *melanarium* the elytra are noticeably narrower, and the front thighs of the male are strongly tuberculate; while in *pennsylvanicum*, with more ample elytra, the front thighs of the males are merely swollen toward the tip. Unless accompanied by males, the separation of the females is a difficult matter, even to the experienced student. I have never noticed in *melanarium* that extreme development of the beak and first antennal joint which is not infrequently seen in *pennsylvanicum*. *Virile* nearly agrees with *melanarium* in the prominent femoral tubercle, which is here, however, closely, plainly striate, while in *melanarium* it is smooth and not, or scarcely visibly, striate. It occurs in Colorado.

12. **A. floridanum** Smith.—Very narrow, black, legs and antennæ dark rufous; pubescence very inconspicuous. Beak (♂) rather stout, cylindrical, evidently shorter than the head and prothorax, very slightly dilated; surface dull at base, gradually more shining toward the tip, very obsoletely punctulate. First antennal joint equal to the next two, second scarcely reaching the eye. Front canaliculate; eyes rather prominent. Prothorax longer than wide, cylindrical;

sides feebly, arcuately, prominent at the middle; surface sparsely, finely punctate; impressed line not complete. Elytra very narrow, twice as long as wide; humeri small but evident; sides diverging very feebly to behind the middle; striæ moderately fine, obsoletely punctate: intervals flat. Punctuation beneath, exceedingly fine and sparse. Length 2 mm.; .08 inch.

♂. Sutural angles somewhat rounded; femoral tubercle prominent; smooth area rather strongly striate inferiorly; limiting ridge feeble; tibial armature minute: other characters as usual.

♀. Not seen.

*Hab.*—Florida (Capron).

The unique type is a male in the National Museum collection. It is nearest *desolatum* in general appearance, but differs by the evident humeri and stronger, striate, femoral tubercle. The unusually stout beak for this section, and the very narrow elytra, which are widest behind the middle, should make this species easily recognizable. Specimens will probably occur with the legs entirely piceous or black.

13. **A. robustum** Smith.—Similar in form to *melanarium*, or a little stouter; entirely black, not very shining and not at all metallic; pubescence fine and sparse. Beak (♂) as long as the head and prothorax, moderately dilated, finely sculptured, except at tip, obviously punctate; (♀) longer, more slender and more strongly curved, not dilated. First antennal joint equal to the two (♂), or three (♀) following, third joint reaching the eye. Front canaliculose; eyes moderate. Prothorax of the usual shape; punctuation moderately fine and close; impressed line nearly complete. Elytra widest at the middle; humeri well developed; striæ rather fine; intervals about three times as wide as the striæ upon the disc. Beneath sparsely, finely punctate. Length 2.5 mm.; .10 inch.

♂. Femoral tubercle prominent; lateral surface flat, obscurely striate; inferior surface nearly flat and meeting the lateral surface at an angle, limiting ridge entirely wanting; other characters as usual.

♀. Sutural angles not rounded, tips of elytra conjointly produced.

*Hab.*—Missouri, Texas, Iowa, Illinois, Michigan (Smith).

A specimen in the National Museum collection is labelled Mass. The correctness of the label may be doubted. The female was originally described by Smith under the name *obesum*, but was subsequently (Ent. Am. III, p. 56) properly referred by him.

14. **A. obsoletum** Smith.—Elongate, entirely black, or with the legs brownish, not very shining and without metallic lustre; pubescence very inconspicuous. Beak (♂) as long as the head and prothorax, moderately slender, not strongly arcuate, quite abruptly dilated; surface dull, except toward the tip; punctuation sparse; (♀) longer and a little more slender, not dilated. Front more or less canaliculate; eyes rather small, not very prominent. Prothorax longer than wide; sides very feebly diverging, slightly prominent at the middle, punctuation rather close; impressed line complete. Elytra elongate oval, nearly



twice as long as wide; humeri wanting; striæ rather deep; intervals flat or slightly convex, about twice as wide as the striæ. Beneath rather sparsely punctate; claws simple. Length 2.2-2.4 mm.; .09-.10 inch.

♂. Femoral tubercle prominent; smooth area not or scarcely visibly striate; limiting ridge well marked; other characters as usual.

♀. Sutural tips moderately produced.

*Hab.*—Dakota, Nebraska, Missouri, Michigan.

Smith also gives Canada and California. The California specimens were considered by him as identical with *ovale*, which is now known to be the female of *obsoletum*; they are, however, without doubt, *hesperum*, females of which are scarcely distinguishable from those of the present species, though the males are readily separated.

15. **A. ellipticum** Smith.—Moderately elongate, entirely black; pubescence sparse, but evident in well-preserved examples. Beak a little longer in the ♀, but shorter than the head and prothorax in both sexes; stout at the base, much more slender, cylindrical, entirely polished and finely, sparsely punctulate beyond the rather strong dilatation, which is present in both sexes. Antennæ rather stout; first joint scarcely as long as the next two, third and fourth equal, second reaching the eye. Front wide, canaliculate; eyes rather large, prominent. Prothorax nearly cylindrical, very slightly longer than wide; sides just visibly arcuate at the middle; surface rather closely punctate; impressed line complete. Elytra about twice as wide as the prothorax, two thirds longer than wide, a little wider at the middle; humeri moderate; sides nearly parallel, feebly, evenly arcuate; striæ moderate, not strongly punctate; intervals flat, not more than twice as wide as the striæ on the disc. Beneath rather numerous but not very closely punctate. Legs rather short and strong for this section; claws nearly simple. Length 1.7 mm.; .07 inch.

♂. Anterior femora merely swollen, compresso-carinate beneath without well-defined groove and ridge; smooth area with coarse, rather distant striæ; tibial armature more strongly developed than is usual in this section; other characters as usual.

♀. Elytral tips slightly prolonged.

*Hab.*—Louisiana, Nebraska, Texas.

The rostral and sexual characters abundantly distinguish this species from any other in our fauna.

16. **A. desolatum** Smith.—Elongate, black; legs rufous, indistinctly pubescent. Beak (♂) rather stout, shorter than the head and prothorax, nearly cylindrical, moderately dilated, only slightly more slender beyond the dilatation, strigose almost to the apex; punctuation sparse but evident; (♀) longer, slender, strongly arcuate, smoother and more shining. First joint of antennæ subequal to the next two, second reaching the eye. Front longitudinally rugulose or canaliculate; eyes moderately prominent. Prothorax cylindrical, a little longer than wide; sides slightly arcuately prominent at the middle; surface rather sparsely, finely punctate; dorsal line feebly impressed, somewhat variable, not complete. Elytra ovate; humeri wanting; striæ rather deep; intervals convex. Beneath sparsely, finely punctate; legs not slender; claws nearly simple. Length 1.6 mm.; .06 inch. (Pl. II, fig. 8).

♂. Anterior femora merely swollen; smooth area not striate; limiting ridge evident; tibial armature minute; other characters as usual.

♀. Elytra prolonged at tip.

*Hab.*—Georgia, Florida.

Three males and one female are before me, agreeing in all essential characters; I cannot, however, be absolutely sure that the female is properly referred, the male is therefore to be regarded as the type.

17. **A. sinuirostrum** n. sp.—Elongate, black, with or without æneous lustre; pubescence fine, sparse. Beak (♂) as long, (♀) noticeably longer than the head and prothorax, stouter at the base, more slender, nearly cylindrical, polished and subimpunctate beyond the insertion of the antennæ. When viewed in profile the base, beginning at the insertion of the antennæ, is flattened or even slightly concave above. Antennæ about as usual; the first joint scarcely as long as the next two (♂), or fully as long (♀). Front moderately wide, longitudinally rugulose; eyes moderate. Prothorax cylindrical, rather more longitudinally convex than usual; sides arcuately prominent at the middle; surface rather sparsely punctate; impressed line more or less imperfect. Elytra rather strongly longitudinally convex; humeri nearly wanting; sides divergent to the middle; striæ moderate; intervals flat or slightly convex. Beneath sparsely punctate; legs rather slender; claws nearly simple. Length 1.7 mm.; .06 inch. (Pl. II, fig. 21).

♂. Front thighs merely swollen; smooth area not noticeably striate; other characters as usual.

♀. Tips of elytra scarcely produced.

*Hab.*—Florida (Lake Ashby).

Several examples collected by Mr. Schwarz or Mr. Hubbard. The form of the beak is unique and sufficient to distinguish this species from any of the related forms.

18. **A. molestum** n. sp.—Moderately elongate, black, moderately shining, without æneous lustre; pubescence nearly wanting. Beak (♂) shorter than the head and prothorax, dilated at one-third from the base, more slender and feebly attenuate beyond the dilatation; punctuation sparse, fine; polished and nearly impunctate in apical third; (♀) longer than the head and thorax, very slender, not dilated, strongly, evenly arcuate, obsolete punctulate; the finer sculpture extending to or a little beyond the middle. Antennæ brown, first joint equal to (♂), or a little longer than (♀) the next two. Front canaliculate; eyes prominent. Prothorax a little longer than wide; apex nearly as wide as the base; sides slightly prominent at the middle; surface rather coarsely and closely punctate; impressed line complete. Elytra moderately, longitudinally convex, widest at or a little behind the middle; humeri wanting or but faintly indicated; striæ deep; intervals more or less convex, especially toward the base. Abdomen rather coarsely, not sparsely punctate. Length 1.6 mm.; .06 inch.

♂. Front thighs merely swollen; smooth area not striate; one or two striæ adjacent to the limiting ridge, which is well marked; sutural angles rounded; other characters as usual in the group.

♀. Sutural angles scarcely rounded, somewhat produced.

*Hab.*—Illinois (Liebeck).

19. **A. minutum** Smith.—Entirely black; pubescence indistinct. Beak (♂) about as long as the head and prothorax, stouter at the base, more slender and slightly tapering beyond the dilatation; finely sculptured in basal half, thence polished to the tip; punctuation fine and sparse; (♀) a little longer, very slender, not dilated. Antennæ as usual. Front longitudinally rugulose; eyes moderate. Prothorax subcylindrical, very little longer than wide; base a little wider than the apex; sides moderately prominent at the middle; surface usually sparsely punctate with nearly complete dorsal line. Elytra rather short, strongly, longitudinally convex; humeri small; sides divergent, rather more strongly than usual, widest at the middle; striæ moderate; intervals nearly flat or feebly convex. Beneath sparsely punctate. Length 1.5-1.8 mm.; .06-.07 inch.

♂. Front thighs merely swollen; smooth area with, at most, a few very fine striæ; limiting ridge evident; other characters as usual in the group.

♀. Tips of elytra produced.

*Hab.*—Georgia, Florida.

20. **A. texanum** Smith.—Closely allied to the preceding, and differing as follows: The beak (♂) is distinctly shorter than the head and prothorax. The elytra are narrower and less longitudinally convex; the humeri relatively a little more prominent; the abdomen more strongly and numerous punctate. The legs are a trifle more slender. This is the smallest species of the section, and should be separated without difficulty by the above characters. Length 1.3-1.5 mm.; .05-.06 inch.

All specimens seen are from Texas, and nearly all from Columbus, where it was taken many years ago by Mr. Schwarz.

21. **A. pennsylvanicum** Boh.—Entirely black, with or without faint, æneous lustre; pubescence very sparse and inconspicuous. Beak (♂) about as long as the head and prothorax, dilated, noticeably stouter at base than beyond the dilatation; polished in about the apical half, and finely, sparsely punctulate; (♀) more elongate and slender, not dilated. First joint of antennæ as long as the next two (♂), or three (♀), second joint reaching the eye. Front rather wide, canaliculose; eyes moderate. Prothorax as long or a little longer than wide, subcylindrical; base a little wider than the apex; sides with the usual median prominence; surface variably punctate, usually moderately, closely, but sometimes quite sparsely; impressed line complete or not. Elytra rather strongly widening to the middle; humeri moderate or small; striæ well impressed; intervals moderately wide, flat or slightly convex. Beneath sparsely, finely punctate. Length 2. mm.; .08 inch. (Pl. II, figs. 9 and 24).

♂. Front thighs merely swollen; smooth area not striate; limiting ridge evident; other characters as usual.

♀. Elytral tips more or less strongly produced.

Occurs from Florida to the New England States, thence westward to Washington and down the Pacific Coast to Southern California.

Examples from the west coast are, as a rule, a little less shining and with less developed humeri; the differences are, however, small and evanescent. The beak is sometimes very much elongated in the female, and the first antennal joint in such cases becomes even

longer than the three following. I am quite confident that this is Boheman's species, but only a reference to the type can settle the matter with certainty.

22. **A. funereum** n. sp.—Elongate, black, opaque; pubescence almost wanting. Beak (♂) somewhat shorter than the head and prothorax, rather slender, not strongly curved, moderately dilated, finely sculptured and opaque almost throughout; punctuation rather fine and sparse. Antennæ piceous brown; first joint about equal to the next two, second rather slender, reaching the eye. Front somewhat depressed, canaliculate; eyes moderate. Prothorax cylindrical, evidently longer than wide; base just visibly wider than the apex; sides nearly straight; punctuation rather strong and close; impressed line nearly complete. Elytra narrow, subparallel; humeri moderate; striæ well impressed, rather closely punctate; intervals flat or slightly convex, about twice as wide as the striæ on the disc. Beneath rather closely and coarsely punctate; legs slender; first joint of tarsi more elongate than usual, being more than twice as long as wide; claws with a small but evident tooth. Length 2.2 mm.; .09 inch. (Pl. II, fig. 20).

♂. Anterior thighs scarcely swollen; smooth area limited to the inferior groove which is not striate. Front tibiæ very feebly widened; middle tibia with a small mucro; hind tibia scarcely visibly armed; other characters as usual in the group.

♀. Beak not longer than the head and thorax, slender, strongly arcuate, polished in apical fourth; tips of elytra scarcely produced.

*Hab*—Oregon, California, Washington (Camp Umatilla).

The opaque surface, parallel form and sexual characters render this a very distinct species. The front thighs of the male are just visibly enlarged, but so feebly that it might readily escape observation. The armature of the hind tibiæ is, as a rule, feebler than that of the middle tibiæ, but the mucro is here exceptionally minute.

23. **A. occidentale** n. sp.—Elongate, black; legs usually piceous brown; not very shining and with never any metallic lustre; pubescence very sparse but evident. Beak not very slender, rather feebly arcuate, a little shorter than the head and prothorax, nearly cylindrical, moderately dilated (♂); longer, scarcely dilated (♀); finely strigose nearly to the tip; punctuation fine, sparse. Antennæ with first joint equal to the next two (♂), or three (♀), third joint reaching the eye. Front canaliculose; eyes not prominent. Prothorax notably longer than wide, subcylindrical; base plainly wider than the apex; sides slightly prominent at the middle, moderately closely punctate; impressed line nearly complete. Elytra narrow; humeri rather strong; sides feebly arcuate; intervals flat, about twice as wide as the striæ on the disc. Beneath sparsely, rather finely punctate. Legs slender; claws nearly simple. Length 2.2-2.4 mm.; .09-.10 inch. (Pl. II, figs. 10 and 25).

♂. Front thighs scarcely visibly enlarged; smooth area almost entirely inferior, very finely, not closely striate; limiting ridge present; front tibiæ only slightly widened; other characters as usual.

♀. Tips of elytra more or less produced.

*Hab*.—Kansas, Nebraska, Texas, Colorado, Utah, Arizona, Oregon, California.

This appears to be a tolerably abundant species throughout the arid and semi-arid regions, both east and west of the Rocky Mountains. It has not yet occurred in the true Pacific fauna. Well-preserved specimens are more noticeably pubescent than any other species of the group.

24. **A. hesperum** n. sp.—The preceding description applies so perfectly to this species, that it is only necessary to note the points of divergence. The humeri are here almost entirely wanting, whereas in *occidentale* they are unusually prominent for this section. *Hesperum* is almost perfectly apterous, the wing being reduced to a slender, parallel fillet, less than half as long as the elytra, and about one-fifth as wide as long. The legs are black in all the specimens I have seen. (Pl. II, fig. 23).

Sixteen examples are before me, all taken in Southern California (Los Angeles Co.), by Mr. Coquillet.

## II.

The species here aggregated include all those which, with simple or nearly simple claws, lack the peculiar sexual modifications of the anterior femora, which characterize the previous series. Taken as a whole they form a far less homogeneous group than the preceding, certain species indeed exhibiting affinities so divergent as to awaken doubts as to the taxonomic value of unguis formation as a primary point of departure.

There will be found in this section a gradual change from the absolutely simple to the feebly angulate or subdental claw. Thus in *reclusum*, *punctinatum*, *curticorne* and *sordidum* the claws are almost perfectly simple; in *perminutum*, *tenuiforme* and *acrophilum* they become subangulate at base, while in *antennatum* and *odorhynchum* there is present an evident, though usually very inconspicuous tooth; these last two leading naturally to the next section. See Pl. III, figs. 13, 14 and 15.

Aside from the usual, more or less evident disparity in the rostrum, sexual differences are generally pronounced; two species only—*reclusum* and *acrophilum*—having the male tibiæ mucronate.

*Perminutum* is, on the whole, decidedly aberrant; it may be at once known from any other species in our fauna by the depressed form, peculiar coloration and antennæ inserted close to the eyes. Were it not for the form of the claws *tenuiforme* would certainly be placed in Section IV, which contains all the other species having the tarsi spined in the male.

The species easily separate, as follows:

- Antennæ inserted very near the base; legs and beak pale. .25. **perminutum**.  
 Antennæ less basal, species entirely black.  
 Pubescence almost entirely wanting. . . . .3.  
 Pubescence moderately abundant.  
 First joint of middle tarsi of ♂ with a strong spiniform process on the inner side. . . . .2.  
 Middle tarsi of ♂ not modified.  
 Beak moderately long, metasternum tuberculate. . . . .1.  
 Beak short, stout; metasternum not tuberculate.  
 Form stout, prothorax widest behind the middle, slightly constricted before the base; pubescence consisting of sparsely-placed squamiform hairs. . . . .26. **reclusum**.  
 Form elongate, prothorax parallel in basal half; pubescence plentiful, fine, condensed at the bases of the third elytral intervals and in a post-scutellar spot. . . . .27. **punctinatum**.  
 1. Humeri well developed; metasternum longer than the first ventral segment; third joint of antennæ not reaching the eye. . . . .28. **curticorne**.  
 Humeri variable, usually small or wanting; metasternum shorter than the first ventral; second or third joint of antennæ reaching the eye.  
 29. **sordidum**.  
 2. Humeri moderate; form narrow; middle femora of ♂ incrassate.  
 30. **tenuiforme**.  
 3. Beak stout, feebly arcuate.  
 Prothorax wider behind; elytral striæ deeper; intervals narrower.  
 31. **acrophilum**.  
 Prothorax small; sides subparallel; striæ less deep; intervals wide.  
 32. **antennatum**.  
 Beak slender, strongly arcuate. . . . .33. **ædorhynchum**.

25. **A. perminutum** Smith.—Depressed, black; legs, antennæ, beak and tips of elytra yellowish or rufous; pubescence very sparse and inconspicuous. Beak shorter than the head and prothorax, nearly straight, slender, cylindrical, very finely strigose toward the base, impunctate, more or less shining. Antennæ inserted close to the base, short, outer joints transverse, first but slightly longer than the second and reaching the eye. Front rather narrow, with two more or less distinct rows of punctures; eyes prominent. Prothorax wider than long; both apical and basal constrictions strong, widest behind the middle; punctures rather coarse, sparse and unevenly distributed; basal fovea large but not deep. Elytra subparallel; humeri moderate; striæ shallow; intervals rather wide, slightly convex. Beneath sparsely, finely punctate; claws nearly simple. Length 1.2-1.4 mm.; .05-.06 inch. (Pl. III, figs. 1 and 1a).

*Hab.*—Massachusetts, Delaware, District of Columbia, Virginia, Georgia, Florida, Texas.

Widely distributed, but apparently rather scarce. An exceedingly isolated form, and one which is more or less out of line wherever placed. The antennæ are inserted nearer to the eyes than in any species known to me. There can hardly be a doubt that in the fourteen examples before me both sexes are represented, but I am

quite unable to distinguish them. There is no sign in any of them of a deflection of the tip of the abdomen, which, in the vast majority of species, enables one to select the males regardless of any special sexual character.

26. **A. reclusum** n. sp.—Robust, black, somewhat shining; pubescence sparse. Beak very stout, as long as the prothorax (♂), slightly longer and a trifle less stout (♀), dilated, sparsely, finely punctate above, more closely and coarsely at the sides; tip shining; supra antennal groove and puncture well marked. First joint of antennæ subequal to the two following, second about reaching the eye. Front wide, punctate and deeply sulcate; eyes not prominent. Prothorax large, transverse; apical constriction scarcely evident; sides divergent to about one-fourth from the base, thence convergent; basal margin slightly expanded, width in front of the base a little greater than at the base; punctuation coarse and moderately close; basal impressed line reaching the middle or nearly so. Elytra ovate, widest behind the middle; humeri small; intervals wide; feebly convex on the disc; more strongly at the side. Beneath sparsely punctate; meso and metasternal side pieces clothed with closely-placed, white, scale-like hairs. Legs not strong, slightly rufescent; claws almost perfectly simple. Length 2.2 mm.; .09 inch. (Pl. III, figs. 2 and 2a).

♂. Middle and hind tibiæ armed with a rather small mucro.

♀. Tibiæ unarmed.

*Hab.*—District of Columbia, New Jersey (Anglesea—Liebeck).

The sutural angles of the elytra are a little more rounded in the male, but the difference is not conspicuous.

27. **A. punctinatum** Smith.—Elongate, black; pubescence plentiful, conspicuously condensed at the bases of the third elytral intervals and in a post-scutellar spot. Beak very short, scarcely as long as the prothorax (♂), a little longer (♀), feebly dilated, punctate throughout, the punctures only slightly denser and stronger at the sides; tip polished. First joint of antennæ short, though nearly equal to the two following, third joint barely or not reaching the eye. Front punctate, not sulcate; eyes small, not at all prominent. Prothorax subcylindrical; base not much wider than the apex, a little longer than wide; apical constriction not well marked; sides feebly divergent to the middle, thence nearly parallel to the base; basal margin not expanded; surface rather densely, finely punctate, sometimes with an imperfect, median, impunctate line; basal fovea small but strong. Elytra fully one-half longer than wide, widest behind the middle; humeri not large; intervals nearly twice as wide as the striæ, plane or very slightly convex. Beneath rather closely, but not coarsely punctate; claws simple. Length 2–2.6 mm.; .08–.10 inch. (Pl. III, figs. 3 and 3a).

*Hab.*—Wyoming (Dr. Horn), Nevada (Wickham), British Columbia (Liebeck).

No sexual differences other than the slightly longer beak of the female have been noticed. The elytra are faintly æneous in some specimens. The condensation of the pubescence at the bases of the third elytral intervals is more or less noticeable in many species;

the post-scutellar patch, however, occurs very rarely. The three form the vertices of an equilateral triangle, which is quite conspicuous in well-preserved specimens.

28. **A. curticorne** n. sp.—Black, rather sparsely pubescent. Beak strong, cylindrical, as long as the head and prothorax (♂), noticeably longer (♀), punctures strong, rather coarse, and more numerous at the sides; tip polished. First joint of antennæ short, barely equal to the next two, second, third and fourth subequal, third not reaching the eye (♂), fourth scarcely so (♀). Front a little wider than the tip of the beak, not sulcate, with two rows of punctures bearing scale-like hairs; eyes moderate, not prominent. Prothorax a little wider than long; apical constriction well marked; sides nearly parallel in basal three-fifths; posterior sinuation scarcely evident; surface rather coarsely, not closely punctate; basal fovea small, punctiform. Elytra about one-half longer than wide, widest at the middle; humeri moderate; intervals rather wide, convex; punctuation beneath rather coarse, not very close. Length 2.4 mm.; .096 inch. (Pl. III, figs. 4 and 4a).

♂. Sutural angles rounded.

♀. Sutural angles not rounded.

Described from a single pair, the male collected by Mr. Schwarz in Southern Texas (San Diego), and now in the collection of the U. S. Department of Agriculture; the female in my own collection from Texas without definite locality. The metasternum bears near the middle of the posterior margin an obtuse tubercle, which is not in the least emarginate at the summit, or geminate, as is the case in *sordidum*. Certainly very closely related to the following species, but apparently distinct by the characters mentioned in the table, also by the larger prothorax, stouter beak, and the less basally inserted antennæ.

29. **A. sordidum** Smith.—Form variable, black, never in the least æneous; pubescence sparse, generally more or less squamiform. Beak cylindrical, not appreciably dilated, subequal to the head and prothorax (♂), or somewhat longer (♀), usually quite strongly punctate, especially at the sides, where the punctures tend to arrange themselves in series; surface alutaceous as far as the insertion of the antennæ, apically polished, or at least shining to a variable extent. Front narrow, scarcely wider than the tip of the beak, not sulcate, but with two conspicuous lines of strong punctures, which are occasionally subconfluent; eyes moderately or not at all prominent. Basal joint of antennæ equal to or a little shorter than the two following, third joint visibly longer than the fourth, second or third reaching the eye. Prothorax usually a little wider than long; base only very slightly wider than the apex; sides subparallel; surface closely punctate with small basal fovea. Elytra more or less ventricose; humeri varying from nearly wanting, to a moderate development; sides rather strongly diverging to a little behind the middle; striæ deep, grossly punctate; intervals convex, narrow or moderately wide. Beneath rather coarsely, but not closely punctate; metasternum with a geminate tubercle near the posterior margin; legs not stout;



last tarsal joint long, projecting beyond the lobes of the third joint for a greater distance than their length. Length 1.6-2.2 mm.; .06-.09 inch. (Pl. III, figs. 6, 6a and 7).

♂. Sutural angles of elytra broadly rounded.

♀. Sutural angles scarcely rounded.

*Hab.*—Utah, Arizona, California (San Francisco to San Diego).

An exceedingly variable insect, unless, perchance, I have confused two or more species in the aggregate above described. In the series of nearly one hundred examples before me I am, however, quite unable to find any group of characters of sufficient constancy to warrant a subdivision. As the variations are, to a considerable extent, geographical, it would be well to indicate the prevailing form in the regions above named; but it is to be remembered that from one locality or another intermediates are present, which more or less perfectly connect the extremes along any line of variation. In general, specimens from the more northern regions have the humeri small or entirely wanting. In these the metasternum is obviously shorter than the first ventral, and the wings are extremely rudimentary. In the prevailing form from Southern California and Arizona the humeri are quite well developed; the metasternum is nearly as long as the first ventral, and the wings are correspondingly more ample. In the Utah and Arizona examples the vestiture is more squamiform, the size smaller, the eyes less prominent than in those from California. The sides of the thorax are generally nearly parallel, but in a series from Phoenix, Arizona, the apical and basal constrictions are well marked. The elytra are generally widest behind the middle, but may be widest at the middle, with the sides regularly arcuate (Utah). In one example from California the legs and antennæ are rufous.

*Var. californicum* Smith.—I have retained this name for a somewhat strongly marked form from the region about San Francisco. It agrees with the Utah examples in the lack of humeri, but is considerably larger and more elongate, with less deeply impressed striæ and flatter intervals. The last tarsal joint is less elongate, projecting beyond the lobes of the third for a distance which is scarcely equal to their length. (Pl. III, figs. 8 and 8a).

Specimens in Dr. Horn's collection, bearing Smith's label, are before me and are identical with typical examples of *vespertinum* kindly sent me by Captain Casey. In case of subsequent division the form from Utah, described by Prof. Smith, will, of course, remain the type of the species. The original specimens were bred "from galls on *Artemisia*," and it should be said that the color, and

to some extent the form as originally described, were due to immaturity. Subsequently specimens were obtained at Lancaster (Los Angeles Co.), California, by Mr. Koebele, both from cecidomyid and dipterousgal ls on *Artemisia californica*.

30. **A. tenuiforme** n. sp.—Very narrow, black, sparsely pubescent. Beak about as long as the head and prothorax, not slender, rather strongly arcuate, scarcely dilated, finely sculptured nearly to the tip; punctuation sparse, fine, a little stronger at the side. Antennæ short, first joint equal to the next two, second reaching the eye, outer joints transverse. Front punctate, not sulcate; eyes moderate. Prothorax about as long as wide, widest a little before the base; sides parallel for a short distance at the apex, thence feebly arcuate to the base, which is a little wider than the apex; surface rather sparsely, but strongly, not coarsely punctate; a short impressed line at the base. Elytra parallel, about twice as long as wide; humeri small; striæ not deeply impressed; intervals somewhat convex. Punctures beneath deep but not close. Length 1.5 mm.; .06 inch. (Pl. III, figs. 5 and 5a).

♂. Sutural angles rounded; intermediate femora stouter; first joint of middle tarsi spined.

♀. Sutural angles not rounded; femora and tarsi unmodified.

*Hab.*—Florida.

Collections of Mr. Schwarz and National Museum. This species would perhaps more appropriately be placed with those showing like sexual characters, and is only retained here because of the simple claws.

31. **A. acrophilum** n. sp.—Black; pubescence very short, fine and sparse. Beak (♂) rather stout, scarcely as long as the head and prothorax, nearly cylindrical, feebly dilated at the middle, finely sculptured nearly to the tip; punctuation close and rather coarse at the sides, finer and less close above; apex shining; (♀) a little longer dilatation post-median, tip somewhat expanded, otherwise in the male. Antennæ inserted at the middle (♂), or a little more basal (♀), first joint but little longer than the second, shorter than the next two, fourth reaching the eye. Front punctate and canaliculose at the middle; eyes not very prominent. Prothorax transverse; sides divergent to the middle, then parallel to the base; apical constriction small; surface dull, densely punctate, with a linear basal fovea. Elytra about one-half longer than wide, widest near the middle; humeri moderate; post-humeral situation small; intervals not wide, nearly flat. Beneath deeply, densely punctate. Legs not stout; claws obtusely swollen at base. Length 2.1-2.3 mm.; .08-.09 inch. (Pl. III, fig. 12).

♂. Sutural angles rounded; all the tibiæ feebly mucronate.

♀. Sutural angles not rounded; tibiæ unarmed.

*Hab.*—Colorado (Garland).

Collections of Dr. Horn, Mr. Schwarz and Mr. Bowditch. This species closely resembles *cribricolle*, and would certainly be placed next to it were it not for the simple claws. Aside from this, *acrophilum* differs by its longer beak, with the antennæ inserted at a

greater distance from the base, the somewhat larger thorax, lack of æneous lustre and mucronate hind tibiæ.

32. **A. antennatum** Smith.—Moderately elongate, black, not shining; pubescence almost wanting. Beak shorter than (♂), or about as long (♀) as the head and prothorax, stout, cylindrical, scarcely, or at most, feebly dilated; tip slightly expanded when the dilatation is marked; surface dull, punctate throughout; the apex more or less shining. Antennæ inserted a little behind the middle, first joint shorter than the two following united, third reaching the eye. Front punctate and more or less canaliculose; eyes small but rather prominent. Prothorax small, somewhat variable in shape, usually as wide as long; sides feebly diverging from apex to base, the divergence a little stronger, as a rule, in the apical half, densely, rather coarsely punctate, with a foveate line at the base. Elytra at base one-half wider than the thorax, about one-half longer than wide, widest a little behind the middle; post-humeral situation obvious; intervals nearly flat, about twice as wide as the striæ. Beneath coarsely, densely punctate; legs thin; claws with an inconspicuous tooth. Length 1.8-2.2 mm. : .07-.09 inch. (Pl. III, fig. 10).

♂. Sutural angles rounded.

♀. Sutural angles not rounded.

An abundant and widely diffused species on the west coast, occurring from Vancouver to Southern California; also in Nevada (Elko) Wickham.

33. **A. œdorhynchum** Lec.—Black, legs sometimes rufopiceous, very sparsely, finely, inconspicuously pubescent. Beak as long as the head and prothorax (♀), a little shorter (♂), strongly curved, thicker at the base, slender beyond the insertion of the antennæ, strigose, except in apical third or fourth, which is more or less polished; punctuation fine, sparse. Antennæ slender, outer joints not transverse, first shorter than the two following, second reaching the eye. Front canaliculose; eyes not prominent. Prothorax a little wider than long; sides slightly diverging from apex to base, with a more or less noticeable post-apical and ante-basal constriction, which leaves the sides slightly arcuate and prominent in middle half or two-thirds; surface closely, but not coarsely punctate; an impressed line of varying length, but usually extending to or a little in front of the middle. Elytra fully twice as wide as the prothorax, about one-half longer than wide, widest at the middle; humeri strong; intervals nearly flat, scarcely twice as wide as the striæ; punctuation beneath moderately strong and close on the first two ventrals and at the sides of the metasternum. Legs thin; claws angulate, or with a very inconspicuous tooth at the base. Length 1.5-2.2 mm. ; .06-.09 inch. (Pl. III, fig. 9).

♂. Sutural angles rounded.

♀. Sutural angles distinct.

*Hab.*—Southern California, Catalina Island, Arizona, Montana.

This is an abundant species in Southern California, and has been taken in some numbers in the Pinal Mountains of Arizona by Mr. Wickham. A single female collected by Mr. Schwarz at Bear Paw Mountain represents the last locality named. There is very little

variation aside from size and color of the legs. *Edorhynchum* in some respects resembles certain species of Section I, but the likeness is merely superficial. There is not the least indication of any of the characters which are peculiar to that group. The intromittent organ of the male is flattened and acuminate at the tip as in the following sections—not cylindrical and rounded as in Section I.

III.

The species here included are a little more numerous than the two preceding groups combined. They agree in having the claws plainly, usually strongly toothed at the base (Pl. IV, fig. 4), and at least two pairs of tibiæ mucronate in the male. In by far the greater number the middle and hind tibiæ are thus armed; in two only—*opacicolle* and *cribricolle*—it is the front and middle tibiæ; while in six species—*tenuirostrum*, *cordatum*, *oblitum*, *furtivum*, *commodum* and *confertum*—all three pairs are mucronate. The mucro of the anterior pair when present is always small, and sometimes so minute as to easily escape notice. In a considerable number of species the mucro of the middle and hind tibiæ is subangulate or dentate beneath. The degree and position of the angulation or denticle seems very constant for each species, and doubtless might, within limits, be used to greater advantage by the careful observer than I have deemed it advisable to do. With but two or three exceptions the species are at least moderately robust, the thorax more or less transverse, wider behind, with a basal fovea; humeri well developed; body plainly pubescent.

The species known to me may be distinguished as follows :

- Prothorax slender; sides nearly parallel—at least in the ♂; base but little wider than the apex.....1.
- Sides of thorax not parallel; base usually much wider than the apex.....2.
- 1. First joint of antennæ shorter than the next two; anterior coxæ of ♂ not tuberculate.....34. **opacicolle.**  
  - First joint of antennæ as long as the next two (♂), or three (♀); anterior coxæ (♂) tuberculate at the apex.....35. **coxale.**
- 2. Prothorax widest before the base; sides not at all sinuate posteriorly. (Pl. IV, fig. 1).....3.  
  - Prothorax variable, often with a slight sinuation before the base, which is never narrower than the middle. (Pl. IV, fig. 2).....4.
  - Prothorax with the sides plainly narrowed behind the middle, which is as wide or even wider than the base; size large, 2 mm. or more, except *furtivum*. (Pl. IV, fig. 3).....11.
- 3. All the tibiæ of the ♂ mucronate; elytral intervals convex.

36. **tenuirostrum.**

Middle and hind tibiæ of ♂ mucronate; elytral intervals flat or nearly so.  
 First joint of antennæ pale; tibiæ and base of femora rufous.

37. **æneipenne.**

Antennæ and legs entirely dark.

Vestiture rather dense, squamiform.....38. **impexum.**

Vestiture not dense, hair-like.

Body less robust; prothorax much wider than long.....39. **metallicum.**

Body more robust; prothorax very little wider than long. 40. **troglodytes.**

4. Beak short, stout.....10.

Beak more slender—at least moderately long.....5.

5. Front narrower than the tip of the beak.....9.

Front not narrower, usually obviously wider than the tip of the beak.

Antennæ inserted very near the base of the beak, first joint nearly or quite reaching the eye.

Vestiture abundant, subsquamiform; beak slender.

Elytra scarcely one-third longer than wide...41. **propinquicorne**

Elytra about one-half longer than wide.....42. **modestum.**

Vestiture finer, sparser; beak stouter.

Surface with reddish bronze lustre; prothorax rather sparsely punctate.

43. **subtinctum.**

Surface black, sometimes slightly æneous; prothorax moderately, closely punctured.....44. **pervicax.**

Antennæ less basal, first joint not reaching the eye.

Head beneath as usual; tibial armature well developed.....6.

Head excavated and polished beneath; tibial armature feeble. 45. **gulare.**

6. Tibial mucro with a more or less conspicuous denticle on the under side.

First joint of antennæ longer than the next two; tibial mucro long.

46. **proclive.**

First joint of antennæ shorter than the next two; tibial mucro short.

47. **chuparosæ.**

First joint of antennæ barely as long as the next two; intervals of elytra more or less convex.

Tibial mucro moderately long with an acute denticle beneath; beak and abdomen more coarsely punctate; first antennal joint nearly reaching the eye.....48. **grossulum.**

Tibial mucro shorter; denticle less acute, subapical; beak and abdomen less coarsely punctate; second antennal joint reaching the eye.

49. **patruele.**

Tibial mucro simple, or at most subangulate beneath.

Form elongate, wider behind; beak parallel, feebly arcuate, much longer in the ♀; third joint of antennæ reaching the eye (♀); body beneath more sparsely punctate than usual.....50. **walshii.**

Form moderately stout; second joint of antennæ usually reaching the eye in both sexes; punctuation beneath closer.

First joint of antennæ subequal to the next two.....7.

First joint of antennæ obviously shorter than the next two, at least in the ♂.

Tibial mucro short, more or less subangulate beneath.

Elytral intervals very little wider than the striæ; body ventricose.

51. **abdominale.**

Elytral intervals wider: body oblong.....52. **perforicolle.**

- Tibial mucro long, simple; intervals much wider than the striæ.  
 Less elongate; beak feebly attenuate; tibial mucro projecting at an angle with the tibia.....53. **novellum**.  
 More elongate; beak distinctly attenuate; tibial mucro projecting in line with the tibia.....54. **nebraskense**.
7. Punctuation beneath not conspicuously coarse.....8.  
 Metasternum and abdomen very coarsely, deeply punctured...55. **minor**.
8. Pubescence sparse.  
 Elytral intervals flatter; hairs beneath less scale-like; surface usually with æneous lustre; strial punctures finer; superior margin of antennal fovea not angulate.....56. **turbulentum**.  
 Elytral intervals noticeably convex; vestiture beneath decidedly squami-form; surface without æneous lustre; strial punctures coarser; superior margin of antennal fovea angulate.....57. **importunum**.  
 Pubescence conspicuous.  
 Tibial mucro long, acute; beak (♀) slender, finely sculptured.  
 Intervals flat; surface frequently æneous.....58. **griseum**.  
 Intervals moderately convex; surface never æneous....59. **æquabile**.  
 Tibial mucro shorter, subangulate beneath near the tip; beak stronger, more coarsely sculptured.....60. **dolosum**.
9. Beak rather long and stout; species small, pubescent. 61. **carinirostrum**.
10. Middle and hind tibiæ mucronate (♂); plainly pubescent.  
 62. **peninsulare**.  
 Front and middle tibiæ mucronate (♂); scarcely pubescent.  
 63. **cribricolle**.
11. Middle and hind tibiæ mucronate (♂).  
 Elytral intervals strongly convex.....64. **porcatum**.  
 Elytral intervals flat or nearly so.  
 Anterior tarsi of ♂ not dilated.  
 Second joint of antennæ reaching the eye; beak more finely punctate.  
 Tibial mucro short; abdomen coarsely punctate; intervals narrower, less flat.....65. **centrale**.  
 Tibial mucro longer; abdomen less coarsely punctate; intervals flat.  
 66. **rostrum**.  
 Third joint of antennæ reaching the eye; beak longer, coarsely punctate.....67. **coloradense**.  
 Anterior tarsi of ♂ dilated.....68. **nigrum**.
- All the tibiæ mucronate (♂), the anterior sometimes very minutely so.  
 Superior margin of antennal fovea scarcely at all angulate. (Pl. IV, fig. 22).  
 Striæ deeper; intervals more or less convex; tibial mucro stronger.  
 69. **cordatum**.  
 Striæ shallow; intervals flat.  
 Beak rather strongly attenuate, scarcely different in the sexes.  
 70. **oblitum**.  
 Beak scarcely, or at most feebly attenuate, longer in the ♀.  
 71. **furtivum**.  
 Superior margin of antennal fovea rather strongly angulate. (Pl. IV, fig. 21).  
 Mucro of middle and hind tibiæ irregular, or appendiculate beneath; beak less attenuate; size larger, more convex....72. **commodum**.  
 Tibial mucro simple; beak more attenuate; size smaller, less convex.  
 73. **confertum**.

34. **A. opacicolle** Smith.—Black, very sparsely and finely pubescent. Beak (♂) not slender, shorter than the head and prothorax; sides parallel, dilated a little behind the middle, and feebly at the tip; surface dull, moderately punctate; tip polished. (♀) a little longer, less dilated. First joint of the antennæ shorter than the next two, third reaching the eye. Front more or less canaliculose; eyes moderate. Prothorax usually a very little wider than long; sides nearly parallel, slightly diverging posteriorly; apical constriction feeble; surface closely punctate, a sub-basal impressed line. Elytra about three-fourths longer than wide; humeri prominent; post-humeral sinuation feeble; sides slightly arcuate, width greatest just behind the middle; striæ deep; intervals narrow, not much wider than the striæ, nearly flat at their summits, more or less rugose or transversely wrinkled. Beneath strongly but not very closely punctate, the sides of the metasternum rather more closely punctured than the abdomen. Legs moderate; claws with a small acute tooth. Length 1.8-2 mm.; .07-.08 inch.

♂. Front and middle tibiæ feebly mucronate; metasternal spicules present.

♀. Tibiæ unarmed.

*Hab.*—Washington, Oregon, California.

A male and female from Placer County, California, have been selected as the types. In these there is not much sexual difference in the elytral tips. The tip of the right elytron is rounded slightly in both sexes, that of the left scarcely rounded. One female shows feeble metasternal spicules, others do not. With the types above mentioned I have associated several female examples in various collections, which differ more or less from the types and from each other, while they agree fairly well in general facies. If on the appearance of males the identity is proved, the following variations are to be noted:

The beak may be much longer than described; the tip polished to a variable extent. The prothorax may be obviously wider than long, with the sides divergent to the middle and parallel in basal half. The elytral intervals may be wider and convex. Notwithstanding these variations, with moderate care, there should be no difficulty in recognizing *opacicolle*; and if males be present, identification becomes perfectly simple. The presence of the metasternal spicules is worthy of especial note as being the only instance known to me outside of Section I. The affinity with the first section thus unmistakably established is furthered by the feebly-toothed claws as well as the general facies.

35. **A. coxale** n. sp.—Elongate, black, sometimes with a feeble, greenish bronze lustre, finely, sparsely pubescent. Beak (♂) as long as the head and prothorax, slender, rather feebly curved, slightly dilated, parallel, strigose and punctate in basal two-thirds, thence more sparsely punctate and shining; (♀) longer than the head and thorax, more slender, not at all dilated, slightly expanded

toward the tip, very finely sculptured and punctulate throughout. First joint of antennæ as long as the next two (♂), or three (♀). Front narrow, very little wider than the tip of the beak, subdepressed, canaliculate: a narrow line of whitish squamules along the inner margins of the eyes, which are not prominent. Prothorax about as long as wide, widest one-third from the base; sides arcuate behind the well-marked apical constriction, sinuate before the base; surface rather sparsely punctate, with an elongate basal fovea. Elytra not quite twice as long as wide, subparallel (♂), a little wider behind the middle (♀); humeri not prominent; intervals somewhat variable, usually less than twice as wide as the striæ, and feebly convex. Beneath sparsely or moderately punctate; the meso and metasternal side pieces conspicuously clothed with white squamiform pubescence. Legs slender; claws with a rather strong tooth. Length 1.9-2.1 mm.; .075-.085 inch.

♂. Sutural angles rounded; anterior coxæ bearing a conical tubercle at summit; middle and hind tibiæ with a very small mucro.

♀. Sutural angles obtuse; anterior coxæ scarcely modified; tibiæ unarmed.

*Hab.*—District of Columbia, North Carolina, Lower California, Arizona.

The last locality is represented by a male in the National Museum collection, which differs from eastern examples only in the beak being entirely polished beyond the insertion of the antennæ. It is very well preserved, and the pubescence is a little more evident than usual. The Lower California example is a female presenting no variation worthy of note.

The sides of the prothorax as well as the elytra are more parallel in the male. The peculiar sexual character is unique. A species of wide distribution, but as yet not common in collections.

36. **A. tenuirostrum** Smith.—Moderately elongate, black, sometimes with faint, cupro-æneous lustre; pubescence consisting of rather sparse squamiform hairs, which tend to become condensed on the third elytral interval. Beak as long as the head and prothorax, often considerably longer (♀), moderately or feebly arcuate, slender, scarcely dilated, parallel, polished except toward the base, sparsely punctulate. Antennæ rather short, first joint scarcely equal to the two following, second reaching the eye. Front with a few serially arranged punctures at the sides, middle scarcely sulcate; eyes feebly convex, not at all prominent. Prothorax as long or a little longer than wide; base but little wider than the apex, widest at or a little behind the middle; sides arcuate, except for the apical constriction; basal margin not expanded; surface densely, coarsely punctate, with an elongate, basal fovea. Elytra about one-half longer than wide; humeri moderate; sides feebly arcuate; striæ deep; intervals narrow, convex, shining. Beneath coarsely, deeply, rather closely punctate. Femora stout, first three tarsal joints subequal, fourth as long as the two preceding together. Claws acutely toothed. Length 1.8-2.4 mm.; .07-.095 inch. (Pl. IV, fig. 1).

♂. Sutural angles rounded; all the tibiæ with a nearly simple mucro, which projects almost at right angles to the tibia.

♀. Sutural angles not rounded, sometimes slightly produced; tibia unarmed.



*Hab.*—Kansas, Nebraska, Texas, Colorado, Montana (Fort Assiniboine).

A series collected by Mr. Schwarz in the latter locality shows a more transverse prothorax, with base and apex more unequal, shorter, more arcuate beak, wider less convex elytral intervals, and less shining surface. With these, however, occurred individuals agreeing with those from further south. The fully armed male tibiæ, combined with the peculiar tarsal structure and shining surface, are sufficient to identify this very distinct species.

37. **A. æneipenne** Smith.—Moderately elongate, black; prothorax opaque; elytra with purplish bronze lustre; tibiæ, base of femora and basal joints of antennæ rufous; pubescence fine and sparse. Beak scarcely differing in the sexes, moderately strong, as long as the head and prothorax, parallel, dilated about one-third from the base, tip slightly broader; surface finely strigose and punctate; tip polished. Antennæ rather short, first joint about equal to the second and third united, seventh and eighth transverse, second reaching the eye. Front strongly punctate, the punctures tending to coalesce longitudinally; eyes not large, moderately prominent. Prothorax a little wider than long; base not much wider than the apex, widest two-fifths from the base; sides arcuate; apical constriction feeble; basal margin not expanded, densely, strongly punctate; basal fovea small, punctiform. Elytra about two-thirds longer than wide, very slightly wider behind the middle; sides subparallel; humeri moderate; intervals wide, flat. Beneath densely, rather coarsely punctate; meso and metasternal side pieces clothed with white squamiform hair; legs moderate. Length 2.4 mm.: .095 inch.

♂. Sutural angles rounded; middle and hind tibiæ with small, non-dentelate mucro.

♀. Sutural angles not rounded; tibiæ unarmed.

*Hab.*—District of Columbia.

Described from one male and four females; collections of Mr. Schwarz and Dr. Dietz. The single male shows a tubercle near the base of the first ventral, which is probably not accidental.

A fine species and evidently rare. It is easily distinguished by the characters in the table.

38. **A. impexum** n. sp.—Black, rather densely clothed with whitish squamiform hairs, which are easily removed. Beak slender, not strongly arcuate, cylindrical, as long as or a little longer than the head and prothorax, and rather feebly dilated (♂), decidedly longer, not dilated (♀), with fine sculpture at base, a furrow over the insertion of the antennæ, beyond which it is entirely polished with very few, fine punctures. Antennæ moderate, first joint equal to the next two, second slender, three-fourths as long as the first, and equal to the third and fourth together, third reaching the eye. Front punctate, the punctures tending to arrange themselves in longitudinal lines; eyes small, widely separated but not prominent. Prothorax as long as wide, widest near the middle; apical margin thickened; sides rounded to the base; surface densely, not very coarsely punctate.

tate, with an impressed line, which does not reach beyond the middle. Elytra about one-half longer than wide, subparallel; humeri moderate; sides feebly arcuate, without post-humeral sinuation; striæ not deep; intervals about one-half wider than the striæ, flat or slightly convex, more or less finely wrinkled; punctuation beneath not dense; legs moderate, last tarsal joint extending beyond the lobes of the third for a distance much greater than their length; claws strongly toothed. Length 2 mm.; .08 inch.

♂. Sutural angles rounded; middle and hind tibiæ with rather long, slender, simple mucro.

♀. Sutural angles not rounded; tibiæ unarmed.

*Hab.*—Lower California (San Julio).

About a dozen specimens seen, and presenting no variation worthy of note. This species bears a superficial resemblance to several others, but the long polished, apically subimpunctate beak with the characters given in the table will make it easily recognizable. It is probably confined to the Peninsula.

39. **A. metallicum** Gerst.—Black, more or less æneous; vestiture hairy, rather plentiful. Beak rather slender, moderately curved, subequal to the head and prothorax (♂), or longer (♀), feebly dilated one-fourth from the base, cylindrical and polished beyond the dilatation; punctuation variable, but usually rather sparse; the superior margin of the antennal fossa strongly angulate. First joint of antennæ subequal to the two following, second reaching the eye. Front wide, punctate, sometimes with a median impressed line; eyes prominent. Prothorax about one-third wider than long; sides strongly arcuate behind the apical constriction; base not expanded; surface closely, deeply, but not very coarsely punctate; basal fovea well marked. Humeri moderate; sides of elytra subparallel, or feebly arcuate (♀); intervals wide, flat. Beneath coarsely but not closely punctate. Legs moderately stout. Length 1.5-2 mm.; .06-.08 inch. (Pl. IV, fig. 5).

♂. Middle and hind tibiæ with slender, simple mucro.

♀. Tibiæ unarmed.

*Hab.*—Texas, Louisiana, North Carolina, South Carolina, Florida.

There is very little sexual difference in the elytral tips, the angles being only slightly less well marked in the male. Very close to the following species, which see for a statement of differences.

40. **A. troglodytes** Mann.—So close to the preceding that a detailed description is not necessary. The prothorax is not or but little wider than long, with the sides less strongly arcuate. The elytra are generally more robust, with the sides less parallel. The beak is a little more slender and less elongate in the ♀; the tarsi not quite so stout. In *troglodytes* the third joint is often as wide as long, while in *metallicum* the third joint is always longer than wide. The claws are also a little more strongly toothed in *metallicum*. The form of the thorax is the most reliable character for separation, but the present species is held as distinct from an assemblage of small differences, rather than from the presence of any very strongly-marked characteristics. (Pl. IV, fig. 6).

An abundant species from Central to Southern California.

41. **A. propinquicorne** n. sp.—Black, rather plentifully clothed with white squamiform hairs. Beak slender, cylindrical, scarcely dilated, as long as the prothorax (♂), or equal to the head and prothorax (♀), finely, sparsely punctate, and entirely polished beyond the insertion of the antennæ. Antennæ inserted very near the base of the beak, first joint nearly or quite equal to the next two and reaching the eye. Front wide, not or scarcely sulcate; eyes prominent. Prothorax slightly wider than long; base about one-fifth wider than the apex, and very little or not at all wider than at the middle; apical constriction well marked; sides slightly sinuate posteriorly; surface rather sparsely not coarsely punctate. Body moderately robust; humeri moderate; sides of elytra subparallel (♂), or a little wider behind the middle (♀); intervals somewhat convex. Punctuation beneath moderately fine, not close. Length 1-5 mm.; .06 inch. (Pl. IV, figs. 7 and 7a).

♂. Sutural tips rounded; middle and hind tibiæ with simple mucro.

♀. Sutural tips not rounded; tibiæ unarmed.

*Hab.*—Texas.

Two males and three females from Southern Texas (San Diego). Collected by Mr. Schwarz and now in the collection of the U. S. Department of Agriculture. This species and the following are easily recognized by their size, vestiture and slender polished beak, with the antennæ inserted very near the base. For a statement of differences see remarks under *modestum*.

42. **A. modestum** Smith.—Very closely allied to the preceding, the description of which so nearly applies that a comparative statement only is necessary. The form is quite noticeably less convex; the thorax slightly smaller and more transverse, always as wide, and in some examples a little wider behind the middle than at the base. The elytra are more elongate, a little less parallel and less pubescent. The beak is stouter at the base and more coarsely punctate about the insertion of the antennæ in the ♂, and noticeably less arcuate in both sexes. The antennæ are a trifle less basal, the first joint scarcely reaching the eye, at least in the ♂. The elytral intervals are nearly flat above, but become more or less convex toward the sides. (Pl. IV, figs. 8 and 8a).

*Hab.*—Illinois, Nebraska, Colorado.

I have seen a specimen labeled Cal.; probably the result of carelessly writing Col.

43. **A. subinctum** n. sp.—Black with reddish bronze lustre, which is especially well marked on the elytra; legs brownish. Beak (♂) not stout, as long as the head and prothorax, feebly dilated, somewhat attenuate, polished, with a few strong punctures about the insertion of the antennæ, otherwise sparsely, finely punctulate; (♀) a little longer, more slender, and still more finely, sparsely punctulate. Antennæ rather stout, inserted near the base, first joint equal to the two following and reaching the eye. Front sulcate, not much wider than the tip of the beak; eyes prominent. Prothorax a little wider than long; apical constriction moderate; subparallel in basal half, with slight ante-basal sinuation; surface sparsely, rather finely punctate, the punctures generally superficial, with their posterior margins more abrupt; basal fovea nearly obsolete.

Elytra about twice as wide as the prothorax, widest behind the middle; humeri moderate; intervals wide, smooth, flat or very feebly convex. Beneath sparsely, rather finely punctate; meso and metasternal side pieces clothed with white squamiform hairs. Legs slender, rufescent. Length 1.4–1.8 mm.; .06–.07 inch.

♂. Sutural angles rounded; middle and hind tibiæ with moderate simple mucro.

♀. Sutural angles not rounded; tibiæ unarmed.

*Hab.*—Texas (Columbus and San Antonio), Lower California (La Chuparosa).

Bears quite a strong resemblance to *turbulentum*, but is readily separated by the more basal antennæ; smaller, more sparsely, less deeply punctate prothorax; wider elytral intervals and reddish surface lustre. The elytra are also more longitudinally convex, and more widened posteriorly. A single female from Lower California is before me, differing only from the Texan examples by its somewhat larger size and less evident reddish lustre of the elytra.

44. **A. peticax** n. sp.—Black, with trace of æneous lustre; surface finely rugulose; pubescence fine, sparse. Beak (♂) barely as long as the head and prothorax, rather slender and noticeably attenuate; basal dilatation not strong; surface polished beyond the dilatation; punctuation fine and sparse; tip subimpunctate; (♀) a little longer and more slender, and polished only in apical third. Antennæ with basal joint nearly equal to the two following, and nearly or quite reaching the eye. Front punctate and sulcate, much wider than the tip of the beak; eyes moderately prominent. Prothorax wider than long, as wide at the middle as at the base; apical constriction and basal situation well marked; surface moderately, coarsely and closely punctate; a median impressed line extending from the basal fovea to the apex. Elytra subparallel in basal two-thirds; humeri moderate; intervals flat, less than twice as wide as the striæ. Beneath rather strongly but not very closely punctate. Length 1.4–1.6 mm.; .06 inch, more or less. (Pl. IV, figs. 2 and 14).

♂. Sutural angles rounded; middle and hind tibiæ with very small mucro.

♀. Sutural angles not rounded; tibiæ unarmed.

Described from two males (Tampa, Fla.), and one female (Hillsboro, Fla.), collected by Mr. Schwarz. The males are to be considered the types, as it is not absolutely certain that the female is properly associated with them. The prothorax is a little smaller, more narrowed behind, and lacks the complete impressed line. This last-named character is very exceptional in this section and its constancy not at all probable. The superficial resemblance of *peticax* to *turbulentum* is so close as to make them almost indistinguishable. The more slender attenuate beak, more basal insertion of antennæ and feebly mucronate tibiæ will make it readily separable when males are at hand.

45. **A. gulare** n. sp.—Black, with reddish æneous lustre; legs rufescent. Vestiture consisting of rather sparse squamiform hairs. Beak as long as the head and prothorax (♂), noticeably longer and more slender (♀), rather feebly curved, cylindrical; basal dilatation moderate; tip slightly expanded; surface entirely shining, sparsely punctate. Basal joint of antennæ scarcely longer than the second, second as long as the next two, not reaching the eye. Front sulcate, with lateral confluent lines of punctures; eyes not large, moderately prominent; head beneath excavated and polished. Prothorax a little wider than long; base about one-fourth wider than the apex, width a little behind the middle subequal to the base; posterior sinuation slight; surface alutaceous, moderately punctate; basal fovea small, shallow. Elytra widest behind the middle; humeri not very prominent; striæ not deep; intervals wide, nearly flat; the hairs proceeding from the stria punctures more conspicuous than usual. Beneath sparsely, finely punctate. Length 1.6–1.9 mm.; .065–.075 inch.

♂. Sutural angles rounded; middle and hind tibiæ minutely mucronate.

♀. Sutural angles not rounded; tibiæ unarmed.

Taken in some numbers by Mr. Schwarz or Mr. Hubbard, at Key West, Florida, also at Biscayne. Resembles *subtinctum* somewhat, but very distinct by the characters given.

46. **A. proclive** Lec.—Form variable, usually moderately robust, black, with or without æneous lustre, pubescent. Beak (♂) moderate, feebly arcuate, punctate and pubescent in basal two-thirds; tip glabrous, shining; (♀) nearly twice as long as in the male, more slender, finely sculptured and punctulate throughout. In both sexes there is a feeble basal dilatation, and the usual furrow over the insertion of the antennæ; basal joint of antennæ as long as the two or three following, being longer in the ♀; eyes not prominent; front sulcate. Prothorax variable; in the majority of specimens a little wider than long, more or less constricted at the apex; base subequal to or a little wider than the middle, sometimes with a slight posterior sinuation; surface closely, rather coarsely punctate, with a small basal fovea. Elytra variable; sides subparallel or broadly arcuate, this difference being mainly sexual; surface somewhat shining; intervals wide, flat or slightly convex. Beneath strongly, rather closely punctate; claws strongly toothed. Length 2.–2.6 mm.; .08–.0104 inch. (Pl. IV, figs. 9, 9a, 9b and 15).

♂. Sutural angles rounded; middle and hind tibiæ with a long mucro, which is dentellate beneath near the tip.

♀. Sutural angles not or scarcely rounded; tibiæ unarmed.

*Hab.*—California, Oregon, Utah, Colorado, Wyoming.

The large number of specimens before me exhibit considerable variation in the proportion of parts. Specimens in the National Museum from Death Valley, California, are smaller and more slender than usual; others taken by Mr. Wickham at Tehachapi, California, have the thorax unusually narrow. Specimens from the region about San Francisco are quite strongly æneous. The sexual characters are, however, practically identical throughout, and are the ones upon which reliance must be placed.

I have little doubt that this species extends much farther north along the Pacific Coast than the above localities indicate, and am confident that *cuprescens* Mann., described from Alaska, is founded on examples similar to the San Francisco specimens above mentioned. An examination of the LeConte types of *proclive* and *crassinatum* shows that they are respectively female and male of the same species. I have chosen to suppress the latter name as being the less characteristic of the two.

47. **A. chuparosa** n. sp.—Robust, black, pubescent. Beak (♂) stout, shorter than the head and prothorax, feebly dilated one-third from the base, thence very slightly narrowing to the tip, finely sculptured almost throughout, moderately punctate and pubescent, with a supra antennal groove, which extends from the base to beyond the middle; (♀) a little longer than the head and prothorax, more slender and less pubescent. Front trisulcate; eyes large, moderately prominent. Prothorax a little wider than long; base nearly one-half wider than the apex; sides rounded behind the apical constriction, subparallel in basal third; basal margin rather strongly expanded; surface moderately, strongly, closely punctate, with an elongate basal fovea. Elytra subparallel in basal three-fifths, about one-third longer than wide; humeri prominent; intervals wide, slightly convex; pubescence condensed at the bases of the third intervals. Beneath rather densely clothed with elongate scales; punctuation strong, rather close. Length 2.-2.4 mm.; .08-.10 inch. (Pl. IV, fig. 16).

♂. Sutural angles narrowly rounded; middle and hind tibiae with rather short, strongly, dentellate mucro.

♀. Sutural angles not rounded; tibiae unarmed.

*Hab.*—Lower California (La Chuparosa).

48. **A. grossulum** n. sp.—Very robust, black, slightly æneous; vestiture consisting of rather sparse, subsquamiform hairs. Beak (♂) as long as the head and prothorax, not slender, moderately curved and dilated, coarsely, closely punctate throughout; supra antennal groove short but deep, first antennal joint scarcely as long as the next two, outer joints becoming transverse, first nearly reaching the eye. Front rather deeply trisulcate; eyes large, prominent. Prothorax a little wider than long; basal margin expanded and nearly one-half wider than the apex; sides arcuate; apical constriction well marked, the apical margin thickened; surface rather coarsely, closely punctate; basal fovea punctiform. Elytra ventricose, not more than one-third longer than wide, widest a little behind the middle; humeri moderate; striae well impressed; intervals nearly twice as wide as the striae, moderately convex. Beneath densely, strongly punctate; legs not stout. Length about 2.3 mm.; .09 inch.

♂. Middle and hind tibiae with moderately long mucro, which bears an acute denticle beneath.

*Hab.*—Arizona (?)

Described from a unique male in the LeConte collection, where it was confused with *abdominale*. The specimen bears no locality label, but the style of mounting and its associations make it practically certain that the locality named is correct.

49. **A. patrulee** Smith.—Robust, ventricose, black, sparsely, finely pubescent. Beak strong, subparallel, dull, finely punctate above, more coarsely at the sides, about as long as the head and prothorax (♂), noticeably longer and very finely punctulate (♀). Antennæ inserted rather near the base, first joint barely as long as the next two, second reaching the eye. Front sulcate; eyes moderately prominent. Prothorax broader than long; apical constriction well marked; subparallel in basal half; basal margin slightly expanded; punctuation moderately coarse, not dense; basal fovea well marked. Elytra less than one-half longer than wide; humeri prominent; sides straight or feebly arcuate and slightly divergent to just beyond the middle, thence more strongly rounded to apex. Striæ deep, intervals twice as wide as the striæ, more or less convex. Punctuation beneath somewhat variable, usually rather fine and sparse for this section. The punctures are most closely placed at the sides of the metasternum and on the last ventral, the short ventrals are entirely impunctate, or with at most one or two feeble punctures at the sides. Legs rather slender; claws with a moderately large tooth. Length 1.6–2.3 mm.; .065–.09 inch. (Pl. IV, figs. 11, 11a and 17).

♂. Sutural angles rounded; middle and hind tibiæ with a short, subapically, dentate mucro.

♀. Sutural angles not rounded; tibiæ unarmed.

Occurs from the New England States to Florida, and westward to Michigan, Illinois and Texas.

This species is a common one in the Atlantic Coast region, and shows very little variation, except in size and convexity of elytral intervals. One example from Florida has the legs and antennæ rufescent. The only species occurring in the same region with which this is at all likely to be confused is *turbulentum*, which differs in rostral characters, flatter, narrower intervals and æneous lustre.

50. **A. walshii** Smith.—Elongate, black, pubescence fine but conspicuous. Beak feebly curved, parallel, tip slightly widened, scarcely longer than the prothorax (♂), as long as the head and prothorax, or at times much longer (♀); dilatation weak, two-fifths from the base (♂), about one-third or one-fourth from the base (♀), finely sculptured and moderately punctate throughout; the tip a little more shining. Front not sulcate and without conspicuous punctuation; eyes moderately prominent. Antennæ somewhat variable, first joint equal to the two or three following, second nearly (♂), or third (♀) reaching the eye. Prothorax wider than long, though sometimes very slightly so; apex not very much narrower than the base; sides rounded behind the apical constriction, as wide at or a little behind the middle as at base; posterior sinuation usually well marked; punctuation moderate; basal fovea not conspicuous. Elytra about three-fourths longer than wide, wider behind the middle, sometimes subparallel in the male; humeri not large; intervals nearly twice as wide as the striæ, more or less convex. Beneath rather densely pubescent; sparsely, finely punctate. Length 1.8–2.2 mm.; .07–.09 inch. (Pl. IV, figs. 12, 12a and 18).

♂. Sutural angles rounded; middle and hind tibiæ with a rather long simple mucro.

♀. Sutural angles not rounded; tibiæ unarmed.

*Hab.*—New Hampshire (Mts. Washington and Monadnock, Blanchard), Massachusetts, District of Columbia, Maryland, Michigan (Marquette), Colorado, Montana, California (Siskiyou Co.).

A common and unusually widely distributed species, though apparently confined to the more northern regions. As might be expected there is a considerable degree of variation noticeable. The beak in the female varies much in length; the first antennal joint, while relatively longer in the female, varies somewhat in both sexes. In the examples from District of Columbia and Maryland the prothorax is more transverse and the punctuation closer, both above and below. The pubescence in these latter examples is sometimes more yellowish.

The specimens taken by Mr. Blanchard on Mt. Washington and Mt. Monadnock are decidedly larger than those seen from elsewhere, but there are no other apparent differences. I have followed Smith in his interpretation of Walsh's *lanuginosum* (which name was pre-occupied), but the identification seems to me by no means certain. Walsh described his species as taken from galls made by a *Cecidomya* on *Salix strobiloides*. In New England both Mr. Blanchard and myself have taken it abundantly from April to August on white birch (*Betula alba*).

Abraded males from Colorado served as types for *vicinum* Smith.

51. **A. abdominale** Smith.—Robust, black; pubescence fine, not very conspicuous. Beak (♂) strong, subequal to the head and prothorax, moderately dilated, scarcely attenuate toward the tip, somewhat shining, fine sculpture extending nearly to the apex, moderately strongly punctate at the sides, more finely above, a conspicuous puncture at the point of dilatation, and a short supra-antennal groove. Antennæ strong, first joint scarcely as long as the next two, second reaching the eye. Front wide, with a shallow median sulcus, on either side of which is a line of confluent punctures; eyes not very prominent. Prothorax a little wider than long; base not very much wider than the apex; sides diverging from the apical constriction to the middle, thence subparallel to the base; posterior situation scarcely evident; surface moderately, closely, strongly punctate; basal fovea extending in front of the middle. Elytra ventricose, more than twice as wide as the prothorax, ovate; humeri small; sides arcuate, widest behind the middle; intervals not much wider than the striæ, flat or nearly so. Metasternum very little longer than the first ventral; punctuation rather coarse but not dense. Length 2.4 mm.; .095 inch. (Pl. IV, fig. 13).

♂. Sutural angles rounded; middle and hind tibiæ armed with a rather short micro which is inferiorly subangulate.

♀. Not seen.\*

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\* Since writing the above I have seen a ♀ in the LeConte collection. It differs from the ♂ in the smoother, slightly longer beak, which is noticeably dilated at the insertion of the antennæ.



*Hub.*—Arizona, California (probably from the southeastern part of the State).

Four males, collections of Dr. Horn, National Museum and myself.

52. **A. perforicolle** n. sp.—Black; pubescence sparse but rather coarse. Beak (♂) barely as long as the head and prothorax, with numerous, rather coarse punctures about the insertion of the antennæ, more finely punctate above; apical third more shining, subimpunctate; (♀) noticeably longer than the head and prothorax, very finely, sparsely punctulate. The dilatation is distinct and rather abrupt in both sexes; the superior margin of antennal fovea angulatè; the form feebly, but noticeably attenuate beyond the dilatation. First antennal joint as long as the two following; (♀) or scarcely so (♂), second joint reaching the eye. Front feebly sulcate and with the usual lateral lines of punctures; eyes moderate. Prothorax rather large, a little wider than long; subparallel in basal two-fifths, thence arcuately narrowed to the apex, which is not constricted. There is a very feeble sinuation just before the basal margin, which is not expanded; surface very coarsely, deeply, somewhat irregularly punctate; the basal fovea elongate and profound. Elytra scarcely one-half longer than wide; sides subparallel to behind the middle; humeri moderate; intervals rather less than twice as wide as the striæ, flat or very slightly convex. Beneath coarsely punctate. Length 1.8–2.4 mm.; .07–.095 inch. (Pl. V, fig. 1).

♂. Sutural angles rounded; middle and hind tibiæ with a short mucro, which is more or less subangulate beneath.

♀. Sutural angles not rounded; tibiæ unarmed.

This species has thus far occurred only along the Atlantic Coast — from Southern New Jersey to Georgia. Some examples are very faintly æneous. The rather large thorax, which is very coarsely punctate and scarcely at all constricted apically, coarsely punctate abdomen and short tibial mucro, are sufficient to characterize this very distinct species.

53. **A. novellum** n. sp.—Moderately robust, black, pubescent. Beak (♂) barely as long as the head and prothorax, scarcely dilated, feebly narrowed toward the tip, not strongly or closely punctate; apical third polished; (♀) a little longer, more slender, finely sculptured throughout, very finely, sparsely punctate. Antennæ inserted near the base, first joint scarcely as long as the two following, third as long as the second but much more slender. Front punctate, with a short, fine impressed line between the eyes; eyes moderate. Prothorax plainly wider than long, width a little behind the middle subequal to the base; sides slightly sinuate before the base, which is somewhat expanded; surface moderately punctate. Elytra about one-third longer than wide; humeri strong; sides nearly parallel to behind the middle (♂), wider behind and more longitudinally convex (♀); intervals convex, about twice as wide as the striæ. Beneath moderately punctate. Length 1.5 mm.; .06 inch. (Pl. IV, fig. 19).

♂. Sutural angles rounded; middle and hind tibiæ with very long slender mucro.

♀. Sutural angles not in the least rounded; tibiæ unarmed.

*Hab.*—District of Columbia, Maryland.

Described from two males and two females, collected by Mr. Schwarz. A very distinct little species.

54. **A. nebraskense** n. sp.—Moderately elongate, not very convex, wider behind, moderately pubescent. Beak (♂) not quite as long as the head and prothorax, distinctly narrowed toward the tip; basal dilatation moderate; surface rugose, very sparsely, obsolete punctate in basal three-fourths; apical fourth polished, impunctate. Antennæ, front, eyes and prothorax as in the preceding species. Elytra about one-half longer than wide; humeri moderate; sides diverging to behind the middle; intervals wide, flat; striæ not very strongly impressed, especially toward the suture. Beneath rather strongly and coarsely but not closely punctate. Length 1.8 mm.; .07 inch.

♂. Sutural angles rounded; middle and hind tibiæ with a rather long slender mucro projecting almost in a line with the length of the tibia.

♀. Not seen.

Described from a single male taken at Superior, Nebraska, and kindly given me by Mr. Knaus. This species resembles both *novellum* and *minor* rather closely. From the former it differs most noticeably by its more elongate form, more attenuate beak and flat intervals, and from the latter by the slightly shorter first antennal joint and much less coarsely punctured ventral surface. From both it may be distinguished by the tibial mucro projecting in the line of the tibia rather than at a considerable angle as is usual. (Pl. IV, fig. 20.)

55. **A. minor** Smith.—Not very robust, black, moderately pubescent. Beak (♂) rather slender, scarcely as long as the head and prothorax, dilated at one-third from the base, attenuate, finely sculptured, except apical third which is polished, a few vague irregular punctures at the sides, (♀) a little longer than the head and thorax, very slender, less dilated and only slightly attenuate, finely sculptured throughout; tip a little more shining; punctuation fine and sparse. First antennal joint equal to the next two, second nearly reaching the eye. Front punctate, not sulcate; eyes moderately prominent. Prothorax nearly as long as wide, width a little behind the middle equal to the base; sides sinuate posteriorly; surface closely, coarsely, perforately punctate; basal fovea not conspicuous. Elytra fully three-fourths longer than wide, sides parallel (♂); a little less elongate, sides feebly divergent posteriorly (♀); intervals moderately wide and convex. Beneath very coarsely, deeply punctate. Length 1.5 mm.; .06 inch. (Pl. IV, fig. 10 and 10a).

♂. Middle and hind tibiæ with long simple mucro.

♀. Tibiæ unarmed.

The sutural angles in the male are only slightly rounded and not very different from the female. The small size and very coarse, deep punctuation of the prothorax and inferior surface, with the long tibial mucro (♂), readily separate this species from any other known to me.

56. **A. turbulentum** Smith.—Rather robust, black, with more or less æneous lustre; antennæ usually more or less brownish; pubescence sparse or moderate. Beak (♂) as long as the head and prothorax, not stout, moderately arcuate, slightly dilated, minutely longitudinally strigose nearly to the tip, finely punctured above, more coarsely serially at the sides, a confluent line of punctures over the insertion of the antennæ; (♀) not or very little longer than in the ♂, more slender and shining, not dilated, very sparsely, minutely punctulate throughout. First joint of the antennæ subequal to the next two, not reaching the eye; eyes moderately prominent; front with a median sulcus, on either side of which is a confluent line of punctures. Prothorax wider than long; apical constriction moderate; middle nearly or quite as wide as the base, before which there is usually a slight sinuation; surface rather closely punctate; basal fovea small, elongate. Elytra about one-half longer than wide; humeri prominent; sides parallel or feebly diverging to the middle; intervals nearly flat, scarcely twice as wide as the striæ. Beneath sparsely punctate, more closely at the sides of the metasternum and abdominal segments. Length 1.7–2 mm.; .07–.08 inch.

♂. Sutural angles rounded; middle and hind tibiæ with a moderately long, nearly simple mucro.

♀. Sutural angles scarcely rounded; tibiæ unarmed.

*Hab.*—New York, Pennsylvania, New Jersey, District of Columbia, Michigan, Illinois, Arkansas, Texas.

A female example in Dr. Dietz's collection, labelled Yuma, Cal., does not differ from eastern specimens, except in having the first antennal joint more elongate. An abundant species in the middle Atlantic region, and is said by Dr. Hamilton to occur on *Vaccinium stramineum*.

57. **A. importunum** n. sp.—Form moderate, black, vestiture rather sparse, not fine. Beak (♂) a little shorter than the head and prothorax, cylindrical, feebly dilated, sparsely punctulate, except about the insertion of the antennæ; supra-antennal groove moderately long; tip a little more shining; (♀) more slender, a little longer than the head and prothorax, scarcely dilated; supra-antennal groove not well defined; punctuation fine, sparse; surface more or less shining beyond the insertion of the antennæ, according to the distinctness of the finer sculpture: superior margin of antennal fovea distinctly angulate. Front punctate, more or less plainly sulcate; eyes moderate. Prothorax wider than long, widest at the base; apical constriction about as usual; basal sinuation feeble; punctuation moderate; basal fovea small. Elytra widening posteriorly; humeri not prominent; intervals wide, more or less convex; striæ generally, not deeply impressed; stria punctures strong. Beneath moderately punctate; metasternum rather conspicuously clothed with scales in well-preserved examples. Length 1.6 mm.; .065 inch.

♂. Middle and hind tibiæ with long simple mucro.

♀. Tibiæ unarmed.

*Hab.*—Georgia, Florida.

Two males and six females from various localities.

The sutural angle is only slightly rounded in the male, and not at

all in the female. *Importunum*, *turbulentum* and *pervicax* resemble one another so closely as to require considerable care in their separation. The very feebly mucronate male tibiae easily separates *pervicax* when that sex is at hand, and it is believed that the tabular differences, supplemented by a careful reading of the descriptions, will enable the student to distinguish the two first named species with reasonable certainty. It is probable that *importunum* and *pervicax* are confined to the extreme southeast Florida and adjacent region, and the fact that in the large material examined no specimen of *turbulentum* appears from south of the Potomac in the Atlantic Coast region, is prima facie evidence that the latter species may, with confidence, be separated simply by its locality label.

58. **A. griseum** Smith.--Form moderate, black, often more or less æneous; pubescence conspicuous. Beak (♂) as long or a little longer than the head and prothorax, noticeably attenuate; apex slightly broader; basal dilatation feeble, punctate and with rather coarse, more or less bristling pubescence in basal two-thirds; tip glabrous, shining; (♀) very little longer than in the male, a little more slender, dull, glabrous and more finely punctate. First antennal joint as long as the two or three following, and nearly or quite reaching the eye, second and third subequal, the latter usually as long as the fourth and fifth together; eyes prominent; front sulcate or not. Prothorax wider than long; sides divergent to the base; apical constriction strong or moderate; basal margin expanded; surface uniformly, closely, not coarsely punctate; basal fovea present. Elytra about one-third longer than wide; humeri moderate; sides subparallel in basal three-fifths; intervals wide, flat or slightly convex. Punctuation beneath moderately strong and close but not dense. Length 1.7-2.1 mm.; .07-.085 inch.

♂. Sutural angles rounded; middle and hind tibiae armed with a moderately long simple mucro.

♀. Sutural angles not rounded; tibiae unarmed.

Occurs from New York to Florida, and westward to Colorado and Arizona.

A common and wide-spread species, exhibiting, as might be expected, considerable variation. The basal antennal joints are especially inconstant in their relative lengths. The pubescence varies in color from grayish to yellowish cinereous, and becomes coarser in the Arizona examples. As a rule, the eastern specimens are more noticeably æneous. *Fraternum* Smith was founded on such specimens, in which naturally, or from abrasion, the pubescence was less conspicuous. From *æquabile*, which it most closely resembles, *griseum* is distinguished by the antennæ being inserted nearer the base, the relatively longer first and third joints, and by the larger prothorax, with the sides posteriorly more divergent, as well as by the characters given in the table. This species is said by

Riley to occur in *Phaseolus pauciflora*. Mr. F. H. Chittenden records observing *fraternum* in great numbers on the leaves of two species or varieties of *Lespedeza* in July and August.

59. **A. æquabile** n. sp.—Moderately robust, black, pubescent. Beak about as in *griseum*, but a little more shining in the female. First antennal joint subequal to the next two, third a little longer than the fourth, much shorter than the two following united. Front not sulcate. Prothorax constricted before the base, which is not wider than the middle. Elytra a little wider just behind the middle; intervals moderately convex. Length 1.6–1.9 mm.; .065–.08 inch.

*Hab.*—Arizona, Lower California (La Chuparosa).

This species so nearly resembles the preceding that a more detailed description is not deemed necessary. It is a little smaller, and is probably never in the least æneous. I have selected as the types a series (♂ ♀) in the collection of the California Academy of Sciences from Lower California, and with them have placed a female from Arizona, in Dr. Horn's collection, which agrees in all essentials.

60. **A. dolosum** n. sp.—Moderately elongate but not slender, black, pubescent. Beak (♂) moderately stout, a little shorter than the head and thorax, dilated a little behind the middle; finely sculptured in basal three-fourths; sides rather coarsely and irregularly punctate and pubescent; tip shining; (♀) longer than the head and thorax, more slender, slightly dilated about one-third from the base; surface dull throughout; punctuation finer but strong, uniform and moderately close. First joint of antennæ as long as the three following in the ♀, a little shorter in the ♂, second joint reaching the eye. Front flat or vaguely sulcate; eyes moderately prominent. Prothorax as long as wide, widest behind the middle, sinuate before the base; surface closely, moderately, coarsely punctate, with an elongate basal fovea. Elytra a little more than one-half longer than wide; humeri not very prominent: sides nearly straight and diverging to behind the middle, thence rounding to tip; intervals about twice as wide as the striæ and nearly flat. Punctuation beneath close, not very coarse; legs rather stout; claws with a strong acute tooth. Length 2.5 mm.; .10 inch.

♂. Sutural tips narrowly rounded; middle and hind tibiæ with a rather short mucro which is subangulate below.

♀. Sutural tips not rounded; tibiæ unarmed.

*Hab.*—Arizona.

Taken by Mr. Wickham at Williams, and distributed in various collections. A specimen in Mr. Wickham's collection is labelled as being found on "Locust." The species is evidently related, but not especially closely, to the eastern *nigrum*, which has similar habits. Some variation in the length and basal situation of the thorax and in the width of the elytral intervals has been noticed.

61. **A. carinirostrum** n. sp.—Black, pubescence well marked. Beak (♂) a little shorter than the head and prothorax, rather stout, feebly curved, scarcely dilated, somewhat shining and pubescent nearly to the tip; (♀) longer than the

head and prothorax, nearly glabrous; sides parallel; surface less shining. In both sexes the punctures are rather large and confluent in longitudinal lines; the intervals more or less carinate. First antennal joint reaching the eye, as long as the three following (♀), a little shorter (♂). Front flat, narrower than the tip of the beak; eyes feebly convex, not at all prominent. Prothorax nearly as long as wide; base about one-fourth wider than the apex; apical constriction feeble; sides subparallel in basal half, with a slight posterior sinuation; surface moderately, strongly and closely punctate; an impressed line at the base. Elytra a little wider at the middle; humeri moderate; sides feebly arcuate in basal half, more strongly posteriorly; intervals rather wide, convex. Punctuation beneath moderate. Length 1.5-1.7 mm.; .06-.07 inch.

♂. Sutural tips rounded; middle and hind tibiæ mucronate.

♀. Sutural tips not rounded; tibiæ unarmed.

*Hab.*—Arizona (Santa Rita Mountains, Wickham).

A very distinct species and easily recognized by the canaliculate and carinate beak, the narrow front and feebly convex eyes.

62. **A. peninsulare** n. sp.—Black, sparsely pubescent. Beak (♂) not as long as the head and prothorax, stout, strongly dilated a little behind the middle, moderately shining, rugosely punctate at the sides, more finely and sparsely above. Antennæ rather short, first joint scarcely as long as the two following, second subglobose, barely reaching the eye. Front feebly sulcate; eyes not prominent. Prothorax about as long as wide; base one-fourth wider than the apex; sides divergent to the middle, thence subparallel. Elytra one-third longer than wide; humeri moderately prominent; sides subparallel, very feebly arcuate; intervals wide, moderately convex, rather strongly uniformly punctate beneath. Legs not stout; claws strongly toothed. Length 2 mm.; .08 inch. (Pl. V, figs. 2 and 2a).

♂. Sutural tips narrowly rounded; middle and hind tibiæ with a short mucro.

♀. Not seen.

*Hab.*—Lower California (La Chuparosa).

A single male from the above locality. The sexual characters and stout, strongly dilated beak at once separate this species from any known to me. It resembles somewhat *reclusum*, which, however, by its simple claws belongs to an entirely different section of the genus.

63. **A. cribricolle** Lec.—Robust, black, more or less æneous; pubescence almost entirely wanting. Beak very short, stout, tapering from eyes to tip, and punctate throughout in both sexes. Front striate; eyes small, not prominent. Antennæ with the first joint very little longer than the second, third reaching the eye. Prothorax small, a little wider than long; sides divergent to nearly the middle; parallel in basal half or three-fifths; surface rather finely, densely punctate; an impressed line near the base. Elytra ventricose; humeri prominent; sides feebly divergent or subparallel to behind the middle; intervals usually not much wider than the striæ, flat or feebly convex, usually shining, but sometimes finely rugulose or transversely wrinkled and opaque. Beneath strongly, moderately, closely, but not coarsely punctate; legs rather slender;

claws with a moderate tooth. Length 2-2.5 mm.; .08-.10 inch. (Pl. V, figs. 3 and 3a).

♂. Sutural tips only slightly more rounded than in the ♀; front and middle tibiæ with a very short mucro.

♀. Beak slightly longer; sutural tips scarcely rounded; tibiæ unarmed.

*Hab.*—Pacific Coast, from Oregon to San Diego; also found in Utah (Knaus).

A not uncommon species throughout the region indicated, and one which there is no possibility of confusing with any other. Only one other species—*opacicolle*—is known with similar tibial armature, and this is readily distinguished by the dull black surface, more elongate form and slender beak.

*Cribricolle* was described from a single specimen taken at San Francisco and was in common with many other species, including several species of *Apion*, recorded under a given number in one of Dr. LeConte's note books. Through some mischance or other there is now no specimen in the LeConte cabinet bearing either this number or name in Dr. LeConte's handwriting, and we are therefore forced to depend upon the description for an identification of the species. In his synopsis of the genus Prof. Smith uses this name for sundry examples of Section I, the majority of which are the species here regarded as *melanarium*, and none of which are from California. Moreover, as Prof. Smith had the LeConte material, and in his description of *cribricolle* does not give California in the list of localities, it seems certain that he too did not see the original type. After a careful study of the original description I am forced to conclude that LeConte really had in hand an example of the species afterwards described by Smith as *brevicolle*, a species which is not rare about San Francisco, and which corresponds very well with LeConte's description.

64. **A. porcatum** Boh.—Very robust, black; pubescence very sparse, fine and inconspicuous. Beak moderately stout, minutely reticulate and punctate throughout, a confluent line of punctures over the insertion of the antennæ. First joint of antennæ as long or a little longer than the next two, second reaching the eye. Front not or very feebly sulcate, with two lines of punctures which tend to coalesce; eyes moderately prominent. Prothorax wider than long, widening to the middle, thence subparallel to the base, before which there is a slight sinuation; punctuation coarse, moderately dense, a foveate line at base. Elytra one-fourth longer than wide; humeri strong; sides slightly diverging to beyond the middle; intervals strongly convex, but little wider than the striæ; legs moderate; claws armed with a strong tooth. Length 2.2-2.6 mm.; .09-.10 inch nearly.

♂. Beak as long or a little longer than the prothorax, moderately dilated; sutural tips of elytra rounded; middle and hind tibiæ armed with a mucro which bears a minute denticle beneath near the tip.

♀. Beak longer, more finely punctured, feebly dilated; sutural tips of elytra not rounded; tibiæ unarmed.

*Hab.*—Pennsylvania, District of Columbia, Massachusetts, Ohio, Virginia, Kentucky, Texas.

Easily known by the large size, robust form, sparse pubescence and strongly convex intervals. It seems rather rare in New England, but is more common from District of Columbia westward to Kentucky.

65. **A. centrale** n. sp.—Very robust, black, sparsely pubescent. Beak (♂) stout, about as long as the head and prothorax, strongly dilated, somewhat attenuate, finely sculptured throughout, feebly shining, roughly punctate about the insertion of the antennæ, more finely above and apically; (♀) a little longer, very finely, sparsely punctulate beyond the insertion of the antennæ. Antennæ rather stout, first joint subequal to the two following, second reaching the eye; eyes prominent. Prothorax wider than long, widest at or a little behind the middle; apex constricted, narrowed more or less plainly before the base; punctuation coarse and close but not crowded; basal fovea strong. Elytra obese, scarcely one-half longer than wide; humeri prominent; sides feebly arcuate in basal half, widest a little behind the middle; intervals twice as wide as the striæ, nearly flat or moderately convex. Beneath very coarsely punctured; legs strong, claws with a moderate tooth. Length 2.1–2.4 mm.; .08–.095 inch.

♂. Sutural angles broadly rounded; middle and hind tibiæ with a very short mucro which is subangulate beneath.

♀. Sutural angles not rounded; tibiæ unarmed.

*Hab.*—Colorado, Montana, Hudson Bay Territory, British Columbia,

This species has been heretofore confounded with *rostrum*, to which it is closely related, but sufficiently distinct by its smaller size, stouter body, heavier beak, more coarsely punctate abdomen, more convex intervals and short tibial mucro.

66. **A. rostrum** Say.—Robust, not very convex, black, sparsely pubescent. Beak moderately stout, feebly tapering, finely sculptured throughout, dilated, with a conspicuous puncture over the insertion of the antennæ. First joint of antennæ not reaching the eye, as long as the next two. Front sulcate; eyes prominent. Prothorax wider than long; sides strongly rounded, narrowed before the base, coarsely, closely punctate, foveate at base. Elytra about one-half longer than wide; humeri strong; sides nearly parallel; intervals wide, flat, each with a single, more or less regular row of shallow punctures. Beneath closely, strongly punctured; legs moderate; tarsi stout, the second joint as wide as long, and not longer than the lobes of the third joint; claws strongly toothed. Length 2.5–3 mm.; .10–.12 inch.

♂. Beak as long as the prothorax; tips of elytra separately rounded; middle and hind tibiæ with dentellate mucro.



♀. Beak one-fourth longer, more finely, sparsely punctulate; tips of elytra conjointly rounded; tibiæ unarmed.

*Hab.*—New Hampshire to Florida and westward to Wisconsin and Texas.

A common species throughout the eastern United States. It occurs abundantly in New England on the wild indigo, *Baptisia tinctoria*, in the seeds of which it breeds. Our largest species with the exception of *umboniferum*.

67. **A. coloradense** n. sp.—Moderately elongate, wider behind, not very convex, black, rather sparsely pubescent. Beak (♂) a little longer than the head and prothorax, tolerably strong, arcuate, nearly parallel, moderately dilated at about one-third from the base, coarsely punctate except at the tip, which is more shining; (♀) decidedly longer, often exceeding half the length of the body. First joint of the antennæ barely as long as the next two, third reaching the eye. Front with rows of punctures and a not very distinct median sulcus: eyes not very prominent. Prothorax wider than long, widest a little before the base; sides arcuate, rather feebly constricted in front, coarsely, densely punctate; basal fovea distinct. Elytra fully one-half longer than wide, widest behind the middle; humeri moderate; intervals flat, less than twice as wide as the striæ. Beneath coarsely, evenly, but not densely punctate; the third and fourth segments punctate, at least at the sides; legs moderate. Length 2-2.6 mm.; .08-.10 inch.

♂. Sutural angles rounded; middle and hind tibiæ with a rather short mucro which is subangulate beneath.

♀. Sutural angles scarcely rounded; tibiæ unarmed.

*Hab.*—Colorado (Colorado Springs 6000-7000 feet—Wickham).

In some examples the thorax is so feebly narrowed before the base as to make its reference to the present group doubtful. It will then be traced to "6" in the table, under which are found *proclive*, *chuparose*, *grossulum* and *patruæ*. It is much less robust than either of the last three named, and from *proclive* may be separated by the longer, more arcuate beak in the male, and the shorter, less strongly angulate tibial mucro.

68. **A. nigrum** Hbst. Moderately robust, not very convex, black, moderately or sparsely pubescent. Beak (♂) as long or a little longer than the thorax, dilated, punctate, pubescent, slightly narrowed toward the tip; (♀) longer, glabrous, punctate, scarcely dilated, or narrowed toward the tip. First antennal joint subequal to the three following, second reaching the eye. Front not sulcate: eyes prominent. Prothorax wider than long; sides rounded; basal and apical constrictions well marked; punctuation coarse, but rather superficial, and with a tendency toward irregularity: base with an elongate fovea. Elytra one-half longer than wide, widest slightly behind the middle; humeri less prominent than in *rostrum*; striæ deep; intervals usually feebly convex with fine punctures subserially placed. Beneath strongly, moderately, closely punctured. Length 2-2.4 mm.; .08-.095 inch.

♂. Anterior tarsi rather strongly dilated; middle and hind tibiæ with a moderately long mucro which is subangulate beneath.

♀. Front tarsi not dilated; tibiæ unarmed.

*Hab.*—New Hampshire, Massachusetts, New York, Pennsylvania, New Jersey, District of Columbia, Indiana, Iowa, Illinois, Kansas.

The dilated male tarsi is a character noticed in no other species in our fauna. There is very little difference in the form of the elytral tips in the two sexes. Common on locust, *Robinia pseudacacia*.

69. **A. cordatum** Smith.—Black, plainly pubescent. Beak (♂) moderate, slightly dilated with numerous punctures in basal half, especially towards the sides; apical half polished with a few fine punctures; (♀) longer, scarcely dilated, less polished, apically and more finely punctate. First joint of antennæ as long as the two or three following, second joint reaching the eye. Front scarcely wider than the tip of the beak, feebly or not sulcate; eyes moderately prominent. Prothorax as long as broad; sides arcuate, widest at the middle; slightly sinuate before the base, moderately, densely, coarsely punctate with an elongate basal fovea. Elytra one-half longer than wide, parallel or slightly wider posteriorly; humeri moderate; intervals more or less convex. Beneath rather closely, not very coarsely punctate; legs moderate; claws strongly toothed. Length 2-2.5 mm.; .08-.10 inch. (Pl. IV, fig. 3).

♂. Sutural angles rounded; middle and hind tibiæ with a rather long mucro, which is dentellate near the tip.

♀. Sutural angles scarcely rounded; tibiæ unarmed.

*Hab.*—Pacific Coast, from Washington to Southern California.

The difference in the form of the body is perhaps sexual, as in the material examined all the males have the elytra wider behind, while in the females the sides are parallel; a condition of affairs just the reverse of what would naturally be expected.

70. **A. oblitum** Smith.—Black, moderately pubescent; the hairs more scale-like than in *rostrum*. Beak scarcely as long as the head and prothorax, rather slender, feebly dilated, attenuate, punctate about the insertion of the antennæ, polished and very sparsely punctulate from thence to tip, scarcely differing in the sexes, except that it is very slightly longer and a little less shining in the female. First joint of antennæ rather short, barely equal to the two following, second reaching the eye. Front with a feeble sulcus; eyes moderately prominent. Prothorax as long as wide, width behind the middle subequal to or a little wider than at the base; sides rounded; apical constriction and basal sinuation well marked; punctuation close but not dense and with the usual basal fovea. Elytra nearly two-thirds longer than wide; humeri moderate; sides nearly straight, except for the post-humeral sinuation, and diverging to behind the middle; surface finely rugulose; intervals flat, twice as wide as the striæ. Beneath not very coarsely, rather sparsely punctate. Length 2-2.4 mm.; .08-.095 inch.

♂. Sutural angles rounded; all the tibiæ feebly mucronate, the front pair very minutely so.

♀. Sutural angles not rounded; tibiæ unarmed.

*Hab.*—Texas, Colorado, Nebraska.

The comparatively slender, attenuate, apically polished and subimpunctate beak, which is equal in the sexes, and the feebly armed male tibiae are perfectly characteristic. *Capitatum* Smith is not different.

71. **A. furtivum** n. sp.—Not very robust, black, sparsely pubescent. Beak (♂) barely as long as the head and prothorax, not stout, moderately dilated, cylindrical in apical half, sparsely punctate, except about the antennal fovea; supra-antennal groove well marked; (♀) obviously longer than the head and prothorax, more slender, dilatation feebler and more basal; surface more finely, sparsely punctulate, in great part shining. Antennae rather slender, first joint as long as (♂), or a little longer than (♀) the next two; front sulcate; eyes moderately prominent. Prothorax as long or nearly as long as wide, widest behind the middle, noticeably narrowed before the base, and somewhat constricted in front; surface moderately, coarsely, closely punctate; basal fovea deep, elongate, sometimes extending as a finer line nearly to the apex. Elytra about one-half longer than wide, widest behind the middle; humeri moderate; surface dull, finely rugose; intervals flat, nearly twice as wide as the striae. Beneath sparsely punctate; legs rather slender. Length 1.7–1.9 mm.; .07–.08 inch.

♂. Sutural angles broadly rounded; all the tibiae with a short mucro, that of the front tibiae being so small as to readily escape observation.

♀. Sutural angles not rounded; tibiae unarmed.

*Hab.*—Georgia.

A number of specimens in the Zimmerman collection, now deposited in the Museum of Comparative Zoology at Cambridge, bear a colored locality label which I was unable to interpret, but they are doubtless from the same region.

72. **A. commodum** n. sp.—Size, form and general appearance of *rostrum*, from which it differs in the following particulars: a little more elongate; beak more coarsely punctate; eyes smaller, less prominent; front not sulcate; prothorax less coarsely, even more densely punctate. Elytra slightly wider behind the middle; intervals wider and noticeably convex.

♂. Sutural angles rounded; all the tibiae armed with a short mucro.

♀. Not seen.

*Hab.*—Montana.

A single male in the collection of the National Museum. The pubescence is entirely wanting, but probably from abrasion; the mucro of the front tibiae is simple, that of the middle and hind tibiae is larger and somewhat irregular. Another male in Dr. Horn's collection, also from Montana, probably belongs here, while differing by the less densely punctate thorax and flat elytral intervals.

73. **A. confertum** Smith.—Again similar to *rostrum*, but a little smaller

and more elongate; beak not notably different in the sexes, dilated and strongly attenuate, strongly punctate laterally, more finely above and toward the tip, which is polished to a greater or less extent. Front with a short sulcus, which may become obsolete. Prothorax very nearly as in *rostrum*, a trifle narrower; surface densely, a little less coarsely punctate; basal fovea profound. Elytra either parallel or decidedly wider behind the middle; intervals narrower than in *rostrum*, with a tendency to become slightly convex.

♂. Sutural angles broadly rounded; all the tibiæ armed with a short, nearly simple mucro.

♀. Sutural angles obtuse; tibiæ unarmed.

*Hab.*—Florida.

In all of the four examples seen the sutural stria is more strongly impressed. This species agrees with the preceding in the all around tibial armature and the strongly angulate superior margin of the antennal fossæ, both very unusual characters and not present in any of the more nearly allied species. From *commodum* it is distinguished by its smaller size, generally more parallel form, flatter elytral intervals, more slender and more strongly attenuate beak and simple tibial mucro. Both species differ notably from *rostrum* by the smaller tarsi, the second joint longer than wide and longer than the lobes of the third joint.

#### IV.

The species here grouped agree in having the claws toothed and the male tibiæ unarmed. The number is somewhat less than in the preceding section, exhibiting, however, a greater divergence in the minor points of structure, color and vestiture. Here will be found nearly every species (*perminutum* being the only notable exception) showing any departure from the usual black color, either in body or appendages. It is worthy of note that none of the species have the broad, shallow, frontal sulcus, so often seen in the preceding section, the nearest approach to it being in *xanthoxyli*. The presence of such a sulcus would point with reasonable certainty to Section III, in case of doubt through the absence of males. With few exceptions the species separate easily and may be distinguished as follows:

Color wholly or in part brown; male tarsi not spined.....7.

Color black; appendages often pale.

Front coxæ (at least in the ♂) yellow.....74. **auripes.**

Coxæ dark.....1.

1. Antennæ entirely black, or at most merely picescent at base.....4.

Antennæ in part pale.

Femora and tibiæ pale.....3.

Legs black.

- Front concave, or with a deep fossa adjacent to the eyes; two basal joints of antennæ pale.....75. **cavifrons**.
- Front flat, without juxta-ocular excavation.  
Prothorax widest at the base; first two joints and club of antennæ paler.  
76. **huron**.
- Prothorax widest before the base; first joint of antennæ pale.....2.
2. Beak nearly straight in basal three-fourths.....77. **varicorne**.  
Beak rather strongly, evenly arcuate.  
Vestiture squamiform, condensed on alternate intervals of the elytra; first joint of antennæ (♀) scarcely longer than the two following.  
78. **alternatum**.
- Vestiture hairy, uniform; first joint of antennæ (♀) fully as long as the three following.....79. **contusum**.
3. Thorax broadest in front of base; beak parallel, in part yellow in the ♂.  
80. **nasutum**.
- Thorax broadest at base; beak tapering, not differently colored in the sexes.  
Beak more slender, as long as the head and prothorax (♂); punctuation beneath coarse and dense.....81. **segnipes**.  
Beak stouter, shorter than the head and prothorax (♂); punctuation beneath sparser and finer.....82. **arizonæ**.
4. First joint of middle or hind tarsi of ♂ with a spiniform process on the inner side.....6.  
Tarsi of ♂ not spined.  
Vestiture squamiform.....83. **fumitarse**.  
Vestiture hairy, at least on the elytra.  
Front narrower than the tip of the beak.  
Form very narrow.....84. **filum**.  
Form robust or ventricose.  
Pubescence sparse, uniform.....85. **ventricosum**.  
Pubescence of the elytra conspicuously condensed at the base, especially on the third interval.....86. **subornatum**.  
Front never narrower, usually obviously wider than the tip of the beak..5.
5. Prothorax subconical; sides nearly straight; beak strongly dilated near the base.  
Legs pale.....87. **dilatatum**.  
Legs black.....88. **crassum**.  
Prothorax with more or less well-marked apical constriction; base not or very little wider than the middle.  
Legs thin, more or less pale; beak short, stout.  
Thorax stouter, beak longer; pubescence well marked.  
89. **decoloratum**.  
Thorax smaller, deeply constricted behind the apex; beak very short; pubescence inconspicuous.....90. **emaciipes**.  
Legs dark.  
Thorax arcuate at middle; tibiæ and tarsi indistinctly paler.  
91. **elutipes**.  
Thorax parallel in basal half; legs entirely black.  
Elytral interval strongly convex; beak longer, tapering.  
92. **carinatum**.

Elytral intervals feebly convex; beak shorter, parallel.

93. **attenuatum.**  
 Legs short, stout, entirely ferruginous; beak elongate, parallel; form rather slender .....94. **solutum.**
6. First joint of middle and hind tarsi armed with a spur.  
 Middle femora of ♂ strongly incrassate; elytra with æneous lustre; anterior femora and all the tarsi rufous.....95. **disparipes.**  
 Middle femora only slightly stouter than the anterior, entirely black, without lustre.....96. **spinipes.**
- First joint of middle tarsi only armed.  
 Posterior margin of antennal fovea extending obliquely backward as usual.  
 Middle femora of ♂ noticeably stouter than the anterior.  
 97. **graciliforme.**
- Middle femora of ♂ not incrassate.  
 Larger; pubescence conspicuous; humeri well developed; metasternum normal.....98. **extensum.**  
 Smaller; pubescence moderate; humeri nearly wanting; metasternum shorter than the first ventral .....99. **parallelum.**
- Posterior margin of antennal fovea transverse; middle femora of ♂ not at all incrassate.  
 Antennæ inserted very near the base; sexual rostral disparity well marked; tarsal spine acute.....100. **aculeatum.**  
 Antennæ less basal; sexual rostral disparity less marked.  
 Tarsal spine shorter, acute.....101. **persimile.**  
 Tarsal spine long, blunt.....102. **fibulipes.**
7. Vestiture hairy.  
 Beak short, stout; thorax piceo-æneous; elytra brown..103. **pyriforme.**  
 Beak moderately long; species entirely brown.  
 Color paler; pubescence uniform, size small.....104. **lividum.**  
 Color darker; pubescence unevenly distributed.  
 Thorax feebly constricted in front, widest at base; claws feebly toothed.  
 Second joint of antennæ (♂), or third (♀) reaching the eye; beak dull nearly to the tip, obviously longer in the ♀; sub-apical callus of the elytra weak; size smaller... ..105. **puritanum.**  
 First joint of antennæ reaching the eye; sub-apical callus strong: size large .....106. **umboniferum.**  
 Thorax rather strongly constricted in front, as wide or wider behind the middle than at base; claws distinctly though not strongly toothed: beak in great part polished, almost without trace of the finer sculpture in apical half, subequal in the sexes.  
 107. **herculanum.**  
 Vestiture scaly, unequally distributed, body obese.....108. **xanthoxyli.**

74. **A. auripes** n. sp.—Moderately slender, black, front coxæ, all the femora and the front and middle tibiæ yellow, hind tibiæ and all the tarsi dusky; pubescence fine and sparse. Beak (♂) feebly curved, as long as the head and prothorax, parallel, slightly dilated at the middle, moderately punctate. Antennæ brownish, inserted near the middle of the beak, first joint scarcely as long as the next two, third not reaching the eye. Front canaliculose, slightly wider than the tip of the beak; eyes moderate. Prothorax as long as wide, cylindrical; sides dilated

a little at the middle, rather finely, moderately, closely punctate; basal fovea linear, reaching nearly to the middle. Elytra widest behind the middle; humeri rather prominent; intervals convex. Beneath moderately punctate. Length 2 mm.; .08 inch.

*Hab.*—Florida.

Described from a single male in the collection of Mr. Ulke. This species may be distinguished from every other in our fauna by the yellow front coxæ. It bears a remarkable resemblance to the European *assimile*, a female of which is before me; and were it not for the fact that this latter is said to have the front coxæ of the male denticulate at the apex, I should scarcely feel warranted in describing our species as distinct. Among our own species *auripes* looks much like *opacicolle*, agreeing well in the general form and feebly curved beak, with the antennæ inserted far from the base; but the pale legs and unarmed tibiæ forbid a close approximation. Its relationship with its present associates seems even more remote. It is certainly a rather aberrant form, and its position in a cabinet arrangement may be left to the judgment of those who may be fortunate enough to obtain examples.

75. **A. cavifrons** Lec.—Robust, black; pubescence fine, plentiful, clothing the beak throughout in the ♂, but wanting beyond the insertion of the antennæ in the ♀; prosternum and anterior coxæ especially densely clothed; infra-ocular fringe long and conspicuous. Beak rather strong, feebly curved, slightly tapering, scarcely at all dilated, barely longer than the prothorax (♂), a little longer but scarcely as long as the head and prothorax (♀); surface finely strigose and moderately punctate (♂); sculpture less pronounced (♀). Antennæ piceous or piceo-testaceous, two basal joints pale, first joint very little longer than the second, outer joints not transverse. Front more or less canaliculate and carinate at the middle, and either depressed from side to side between the eyes or with a well-marked juxta-ocular depression; eyes moderate. Prothorax wider than long, or occasionally as long as wide; sides divergent to the middle, thence parallel to the base; apical and basal sinuations rather feeble; surface closely, strongly punctate; basal impression linear. Elytra about one-third longer than wide, broadest behind the middle; striæ wide; intervals but little wider than the striæ, nearly flat. Beneath strongly, rather closely punctate; legs slender, first tarsal joint more than twice as long as wide, equal to the next two; claws with a moderately strong tooth. Length 2-2.5 mm.; .08-.10 inch.

*Hab.*—Pacific Coast, from British Columbia to Southern California.

The sutural angles are slightly rounded in the male, but the difference is not very obvious. A strongly-marked species, and with the exception of the one which follows, not at all closely related to any other. It seems to be common throughout the region in which it occurs.

76. **A. huron** n. sp.—Very close to the preceding, the description of which applies throughout, except in the following particulars: The front is never depressed below the level of the eyes, and entirely lacks the juxta-ocular fossa so characteristic of *cavifrons*. The antennal club is always more or less noticeably paler than the intermediate joints, and the tarsi are somewhat stouter. The difference in the latter respect is quite marked when compared with California specimens of *cavifrons*, but less so when compared with examples from the Puget Sound region. While it is possible that further experience may show *huron* to be worthy of no more than varietal standing, it is my conviction that the two forms are now permanently geographically isolated, and that they must soon if they have not already become distinct.

Described from one male and three females collected at Detroit and Ann Harbor, Mich., by Messrs. Hubbard and Schwarz.

Since the above was written I have seen several specimens from Illinois in Mr. Liebeck's collection.

77. **A. varicorne** Smith.—Black, often with more or less æneous lustre, rather conspicuously clothed with whitish hair, which becomes squamiform anteriorly and beneath. Beak rather slender, subcylindrical, nearly straight, about as long as the head and thorax in the ♀, obviously shorter in the ♂; base slightly thickened, clothed with scales as far as the insertion of the antennæ, thence glabrous, polished and with well-marked punctuation. First joint of antennæ yellow, nearly or quite equal to the next two, second reaching the eye, outer joints transverse. Front very little wider than the tip of the beak, with a more or less distinct, fine, median sulcus; eyes not prominent. Prothorax a little wider than long, widest a little before the base; sides rather strongly divergent, moderately arcuate; apical constriction feeble, not at all sinuate before the basal margin, which is not expanded; surface closely, strongly punctate; basal fovea small. Elytra nearly one-half longer than wide, subparallel or a little wider behind the middle; humeri not prominent; no post-humeral sinuation; striæ not deep; intervals wide, flat. Beneath rather coarsely, not very closely punctate; meso and metasternal side pieces more densely clothed; legs stout, first tarsal joint usually a little longer than wide, second as wide as long, or sometimes obviously transverse. Length 1.5–1.9 mm.; .06–.08 inch. (Pl. V, figs. 4 and 4a).

The sutural angles are somewhat rounded in the male.

*Hab.*—Georgia, Florida.

Under the name *varicorne* I have included a mass of material, from which it would be quite easy to select from diverse localities forms so varied as to make possible the definition of four or five species; but a careful study of nearly one hundred and fifty examples has thus far rendered all attempts at subdivision unsatisfactory. As further experience, however, may prove the necessity of separation, as a guide to a more definite cabinet arrangement, I indicate below the lines along which my study leads me to believe the separation will take place.



*Varicorne*.—The typical form above described occurs in Georgia and Florida, and differs from all western representatives by the sparser, more hair-like vestiture of the upper surface, and from *Var. a*, which it most resembles, by the prothorax more widened posteriorly.

*Var. a*.—Vestiture scaly, not very dense, scarcely different otherwise from the typical form, except in form of thorax above alluded to.

*Hab.*—Montana, Texas, New Mexico.

*Var. b*.—Beak (♀) more than twice as long as the prothorax; first antennal joint longer; eyes (♀) less prominent than usual. In all other forms the beak (♀) is less, usually much less, than twice the length of the prothorax, and the eyes are not appreciably less prominent in the ♀. The ♂ is scarcely distinguishable from *Var. a*.

*Hab.*—"North-West Territory," Nebraska, Texas, Colorado.

*Var. c*.—Vestiture very densely scaly; scales broader than usual; tarsi more slender and with the claw joint a little longer than in the preceding varieties.

*Hab.*—Arizona, California (Yuma).

Specimens from Lower California are intermediate between typical *varicorne* and *Var. a*.

78. **A. alternatum** n. sp.—Form a little less elongate than in *varicorne*. Beak moderately, strongly, nearly evenly arcuate; vestiture scaly, condensed on alternate intervals of the elytra. The latter character is easily obscured if the specimens are worn. (Pl. V, fig. 5).

So near *varicorne* that the above short diagnosis offers all that is necessary for its recognition.

I have seen many specimens, all taken by Mr. Wickham at Albuquerque, New Mexico.

79. **A. contusum** Smith.—Black, moderately pubescent. Beak (♀) rather slender, fully as long as the head and prothorax, quite strongly arcuate, parallel, a little widened at the tip, scarcely at all dilated toward the base, distinctly punctate throughout, more finely and remotely above. First joint of antennæ very long, fully equal to the next three, second reaching the eye. Prothorax slightly wider than long, widest a little behind the middle; sides rather strongly arcuate; basal margin not at all expanded; surface closely punctate, a little less so toward the middle, leaving an ill-defined, median, impunctate line; basal fovea rather small. Elytra nearly one-half longer than wide; humeri rather strong; sides noticeably divergent to behind the middle; intervals convex, a little wider than the striæ. Beneath sparsely punctate; meso and metasternal side pieces clothed with white pubescence. Legs rather slender; claws strongly toothed. Length 2.1 mm.; .085 inch.

*Hab.*—Dakota.

I am indebted to the kindness of Mr. Henry Ulke for an opportunity to examine the unique type, which seems never to have been duplicated. It is one of a very few species in which the thorax is

narrowed at the base without trace of sinuation or expansion of the basal margin, but is not at all closely allied to any of them. The antennæ are paler toward the base, with the first joint decidedly yellow. It is possible that when the male appears this species may have to be referred to Section III.

Notwithstanding the difference in the shape of the thorax, which, however, is not very marked, I strongly suspect that *contusum* is either the female of the species I have called *spinipes*, of which only males are known, or else a somewhat aberrant female of *extensum*. There is, as yet, however, no evidence which warrants my so placing them.

80. **A. nasutum** n. sp.—Moderately robust, dull black, not at all shining; legs except knees and tarsi yellow; the tibiæ sometimes slightly infusate; vestiture conspicuous, consisting of narrow scales or squamiform hairs, which are condensed at the base of the third elytral interval and beneath. Beak moderately stout, cylindrical, not noticeably dilated, subequal in length to the head and prothorax, rather closely and strongly punctate throughout. First joint of antennæ yellow, as long as the two following, second very nearly reaching\* the eye. Front but slightly wider than the tip of the beak; eyes not prominent. Prothorax nearly as long as wide, widest a little before the base; sides rounded behind the apical constriction, not sinuate before the base; surface moderately, closely punctate, the punctures more or less concealed by the vestiture. Elytra about one-half longer than wide; humeri prominent; sides subparallel, feebly arcuate; intervals rugulose, nearly flat, about twice as wide as the striæ. Beneath strongly, closely punctate; legs rather short, moderately stout. Length 2-2.5 mm.; .08-10 inch.

♂. Beak black and densely clothed with squamiform hairs as far as the insertion of the antennæ; tip narrowly black, intermediate portion yellow.

♀. Beak concolorous and with but few hairs at the base.

*Hab.*—Texas, New Mexico.

This is the only species thus far known in our fauna (there are several in Europe) which exhibits a sexual difference in the color of the beak. The females seem scarcer than the males, which have found their way in small numbers into most of the larger collections. Mr. Wickham has taken both sexes at Albuquerque, New Mexico, but apparently without recognizing their identity.

81. **A. segnipes** Say.—Robust, black; basal joints of antennæ, femora and tibiæ pale; knees dusky; vestiture conspicuous, consisting of elongate, grayish white scales or scale-like hairs, which are condensed at the bases of the third elytral intervals, on the front coxæ and on the meso and metasternal side pieces. Beak (♂) not stout, nearly straight, as long as the head and prothorax, a little thicker in basal third, noticeably attenuate beyond the rather feeble dilatation; (♀) longer and more slender; surface finely sculptured and punctate throughout in both sexes. First joint of antennæ as long as the next two (♂), or three (♀),

second joint not reaching the eye. Front punctate, not channeled; eyes rather small, not very prominent. Prothorax a little wider at base than long, subconical; apical constriction moderate; sides arcuately divergent; basal margin expanded; surface coarsely, densely punctate; basal fovea small or obsolete. Elytra parallel or feebly arcuate in basal two-thirds; humeri moderate; intervals wide, flat and subbiserially punctate. Beneath coarsely, deeply, densely punctured. Length 2-2.6 mm.; .08-.10 inch. (Pl. V, figs. 7 and 7a).

*Hab.*—Massachusetts, District of Columbia, North Carolina, Missouri, Florida, Texas, Kansas.

The sutural angles of the elytra are plainly rounded in the male, scarcely rounded in the female. The number of pale antennal joints varies individually, being in my experience never less than two, and not infrequently as many as six or seven. Say describes it as found in seeds of *Astragalus*; Riley in seeds of *Tephrosia virginiana*. In "Ent. News," 1894, p. 141, Mr. Webster reports as follows: Adults, larvæ and pupæ found in pods of *Tephrosia virginiana*, October 5th, near Toledo, Ohio. The major portion of the larvæ had transformed in the pods—in the fields—as early as the 14th of September.

82. **A. arizonæ** n. sp.—Of the same size and general appearance as the preceding, the description of which applies sufficiently well, with the following exceptions: Form a little more robust; prothoracic and abdominal punctures finer, shallower and well separated. Beak (♂) shorter than the head and prothorax, moderately dilated a little behind the middle, rather strongly attenuate, pubescent nearly to the tip. First joint of antennæ scarcely as long as the two following, third reaching the eye. The antennæ are a little more basal in *signipes*, and the femora are dusky at base. In the few specimens of *arizonæ* seen the femora are entirely pale, knees not darker. Female not seen. (Pl. V, fig. 8).

*Hab.*—Arizona.

83. **A. fumitarsæ** n. sp.—Moderately robust, black; legs pale, knees and tarsi dusky; vestiture rather conspicuous, condensed along the suture toward the base, otherwise consisting of narrow scales or scale-like hairs, which are arranged in a single, more or less regular line on each elytral interval, and arise in about equally conspicuous lines from the stria punctures. Beneath it is more decidedly scaly and denser, especially on the sternal side pieces. Beak (♀) considerably longer than the head and prothorax, slender, nearly straight in basal two-thirds, moderately dilated at basal fourth; surface rather finely punctulate in the basal region, polished and subimpunctate beyond the middle. First joint of antennæ a little shorter than the next two, third joint scarcely reaching the eye. Front scarcely wider than the tip of the beak, bisulcate, with a median carina; eyes moderately prominent. Prothorax as long as wide; sides nearly parallel from the base to the middle, thence more strongly rounded and somewhat constricted before the apex; surface moderately closely, not very coarsely punctate, with an impressed line reaching from the base to a little beyond the middle. Elytra rather strongly, longitudinally convex; humeri moderate; the intervals nearly

flat, very little wider than the striæ. Beneath moderately punctate; legs rather slender. Length 2 mm.; .08 inch. (Pl. V, fig. 6).

The unique type, from which the above description was taken, was collected by Mr. Schwarz at San Diego, in Southern Texas, and is now in the collection of the Department of Agriculture.

The superficial resemblance to a small *segnipes* is rather marked, but the color of the antennæ, with the much shorter basal joint, the shape of the rostrum, finer punctuation, more longitudinally convex elytra and difference in vestiture, show it to be abundantly distinct.

84. **A. flum** n. sp.—Very elongate, black, moderately pubescent. Beak (♀) longer than the head and thorax, slender, cylindrical, very feebly dilated near the base; the tip a little broader; surface shining; punctuation sparse, fine. First joint of antennæ equal to the two following, second reaching the eye. Front narrower than the tip of the beak, punctate, not sulcate; eyes not prominent. Prothorax subcylindrical, a little longer than wide, a little wider at one-third from the base, rather coarsely, moderately closely punctate, with elongate basal fovea. Elytra narrow; humeri small; sides feebly arcuate, widest behind the middle; intervals feebly convex, scarcely twice as wide as the striæ. Abdomen almost impunctate; legs slender. Length 1.5 mm.; .06 inch. (Pl. V, figs. 9 and 9a).

Described from a single female specimen from San Borja, Lower California, in the collection of the California Academy of Sciences. In the absence of the male it cannot be certain that this species belongs in the present section. The small size, narrow form, feebly longitudinally convex elytra, narrow front and remotely punctate abdomen will, however, easily separate it from anything else in our fauna.

85. **A. ventricosum** Lec.—Form obese, black, with or without æneous lustre; pubescence moderate; beak rather stout, cylindrical, not dilated, subequal to the head and prothorax, slightly longer in the ♀; rather finely, sparsely punctate above, more coarsely subseriately at the sides; supra antennal groove more or less distinct. Antennæ slender, first joint about as long as the next two, second reaching the eye. Front narrower than the tip of the beak, not sulcate, either nearly impunctate, or with punctures arranged in two more or less regular longitudinal rows; eyes not prominent. Prothorax small, wider than long; sides feebly diverging, slightly contracted in front; surface not closely, usually somewhat irregularly, superficially punctate, a short foveate line at base. Elytra ventricose, not much longer than wide; humeri small, post-humeral sinuation lacking; sides arcuately diverging to apical two-fifths, thence more suddenly rounded to apex; intervals usually fully twice as wide as the striæ, more or less convex. Beneath rather sparsely punctate; legs slender, last tarsal joint very long, projecting beyond the lobes of the third about twice their length; claws with a small acute tooth. Length 1.4-1.8 mm.; .06-.07 inch. (Pl. V, figs. 12 and 12a).

*Hab.*—From Colorado to Texas and westward to Southern and Lower California.

In the male the sutural tips are narrowly rounded; in the female scarcely at all so. A moderate amount of variation is noticeable, chiefly in the sculpture of the beak, length of basal antennal joint and width of elytral intervals. The species is abundant on mesquite throughout the southwest.

Smith's types are from the same region as were LeConte's, and are in no way different. A female example from Columbus, Texas, in Dr. Horn's collection, has the tibiæ and tarsi pale, the beak longer, with the fourth joint of the antennæ reaching the eye. It possibly represents a new species, but until males turn up I prefer to consider it an extreme variation of the present species.

86. **A. subornatum** n. sp.—Robust, black; pubescence unevenly distributed, rather conspicuously condensed at the base of the elytra, extending on the third interval more than half-way to the middle, and in a more or less ill-defined patch behind the middle of each elytron. Beak ( $\zeta$ ) a little shorter than the head and prothorax, parallel, rather abruptly but not widely dilated at one-fourth from the base; surface densely punctate throughout. First joint of antennæ as long as the next two, second reaching the eye. Front a little narrower than the tip of the beak, with two lines of confluent punctures, the interval between them narrow, cariniform; eyes moderate. Prothorax slightly wider than long; sides moderately divergent from apex to base, a faint subapical constriction; surface closely, not very coarsely punctate; basal fovea small. Elytra scarcely one third longer than wide; humeri prominent; sides broadly arcuate, widest at the middle; intervals flat, not much wider than the striæ. Beneath rather coarsely and closely, but not deeply punctate; legs moderate, first tarsal joint less than twice as long as wide, claw joint projecting beyond the lobes of the third, a distance equal to their length. Length 2 mm.; .08 inch.

*Hab.*—Texas.

Described from two males, one taken at Luling by Mr. F. S. Cate, of Wakefield, Mass., and now in his collection; the other without more definite locality from Mr. Liebeck, who has kindly allowed me to retain his unique. The sutural angles are rounded, that of the right elytron more strongly—as is usual. The vestiture, narrow front and rostral punctuation, are a combination of characters which render the identification of this species unusually easy.

87. **A. dilatatum** Smith.—Robust, strongly convex, the thorax and elytra forming a nearly continuous curve when viewed in profile, black; femora and tibiæ yellow; tarsi, tips of tibiæ and knees picescent; vestiture moderately conspicuous, consisting of rather fine whitish hairs, which are, as usual, coarser and more numerous beneath. Beak ( $\zeta$ ) not slender, parallel, subequal to the head and prothorax, subangularly dilated over the insertion of the antennæ at

the basal third; surface scarcely shining, and rather coarsely, irregularly punctate, especially toward the base. In the ♀ the beak is a little longer and smoother, the dilatation is fully as strong as in the ♂, and at about one-fourth from the base. First antennal joint flexuose, about as long as the three following. Front scarcely wider than the tip of the beak, punctate, not sulcate, eyes not very prominent. Prothorax about as long as wide, subconical; sides nearly straight; apical and basal constrictions feeble; surface moderately closely, not coarsely punctate above, more sparsely and a little more finely at the sides; basal fovea obsolete. Elytra about one-half longer than wide; humeri moderately prominent; sides subparallel or feebly divergent in basal half; intervals flat, scarcely twice as wide as the striæ. Beneath moderately punctate; legs slender, first tarsal joint fully twice as long as wide, second longer than wide. Length 2.5-2.7 mm.; .10-.11 inch.

Specimens are not numerous in collections, and are all from Arizona.

The sutural angles are a little more noticeably rounded in the male. The strongly flexuose basal joint of the antennæ is a character worthy of especial note, and taken with the color of the legs and more slender tarsi, very readily separates this from the following species, with which alone it is at all closely allied.

88. **A. crassum** n. sp.—Robust, black; legs faintly rufescent; pubescence fine, sparse. Beak (♂) strong, subparallel, fully as long as the head and prothorax, abruptly angularly dilated over the insertion of the antennæ at the basal fourth; surface dull, coarsely, but not deeply, irregularly punctate at the sides, less coarsely above, a fine impressed line from the base to the middle. First joint of antennæ barely as long as the next two, and of the usual form, second reaching the eye. Front slightly wider than the tip of the beak, subconfluently punctate, not sulcate; eyes moderately prominent. Prothorax subconical; sides nearly straight; apical and basal constrictions obsolete; punctuation moderately close, superficial. Elytra scarcely one-half longer than wide, widest at the middle; humeri moderate; post-humeral sinus not evident; sides feebly arcuate in basal half; intervals fully twice as wide as the striæ. Beneath rather sparsely, not coarsely punctate; legs moderately stout, first tarsal joint less than twice as long as wide, second as wide as long. Length 2.8 mm.; .11 inch. (Pl. V, figs. 11 and 11a).

*Hab.*—Virginia (Penington Gap).

Described from a single male in the collection of Messrs. Hubbard and Schwarz. The sutural angles of the elytra are only slightly rounded. The rostral impressed line is unusual and possibly individual. Its relation to the preceding species has been there noticed. In addition to the differences there mentioned, it may be said that *crassum* is of stouter build throughout, less longitudinally convex, more sparsely pubescent, with shorter first antennal joint and narrower elytral striæ.

89. **A. decoloratum** n. sp.—Form moderate, black; legs pale; femora and tibiae more or less diffusely annulate with a darker shade; tarsi dusky; antennae paler toward the base; pubescence well marked. Beak stout, as long or sometimes longer than the prothorax, just visibly dilated over the insertion of the antennae and slightly narrower toward the tip; surface moderately punctate, sparsely pubescent in both sexes. First joint of antennae not much longer than the second, obviously shorter than the two following, second about reaching the eye, outer joints transverse. Front but little wider than the tip of the beak, with two lines of punctures; eyes not prominent. Prothorax about as long as wide, about one-half wider at base than at the apex; sides feebly arcuate and subparallel in basal half, more strongly rounded in front and moderately contracted before the apex; basal margin slightly expanded; surface evenly, moderately strongly and closely punctate; basal fovea small. Elytra about one-half longer than wide; humeri moderate; sides feebly diverging to the middle; intervals flat or slightly convex, not much wider than the striae. Punctuation beneath moderate; legs slender. Length 1.5-1.8 mm.; .06-.07 inch. (Pl. V, fig. 13).

*Hab.*—Massachusetts, District of Columbia, Virginia, North Carolina, Iowa, Arizona.

The sexual differences are very feeble, the beak averaging a trifle longer in the female, and the sutural angles being slightly less rounded in the same sex. In the Arizona examples the first joint of the antennae is a little longer than described, being quite equal to the next two. Mr. Wickham has found the species in some abundance on *Desmodium* at Iowa City.

90. **A. emaciipes** n. sp. Black; legs entirely yellow, more rarely with the femora piceous; body more obese than the preceding; pubescence fine, sparse, inconspicuous. Beak very short and stout, subequal to the prothorax, evidently dilated at or just behind the middle, rather coarsely, irregularly punctate. Antennae either pale throughout, or almost entirely piceous, proportioned as in the preceding species. Front about as before; eyes a trifle more prominent. Prothorax evidently smaller than in *decoloratum*, wider than long, very strongly constricted before the apex: surface coarsely, closely, but unevenly punctate, there being usually a small supero-latero-ventral smooth space behind the middle. Elytra broader, with more prominent humeri, otherwise about as before. Abdomen rather coarsely, closely punctate; legs thin. Length 1.4-1.9 mm.; .056-.076 inch. (Pl. V, figs. 10 and 10a).

*Hab.*—New Hampshire, Massachusetts, Pennsylvania, District of Columbia, Maryland, Michigan, Illinois.

This species was confused by Smith with the preceding, from which it is readily separated by the smaller, strongly constricted thorax, which is more coarsely and unevenly punctate; stouter body; shorter, more strongly dilated and more coarsely sculptured beak and sparser pubescence, especially beneath. In addition, it may be said that the metasternum and first two ventral segments are much

more tumid, and the first joint of the anterior tarsi is noticeably more elongate. The sexes are scarcely distinguishable.

91. **A. elutipes** n. sp.—Robust, black; tibiæ and tarsi indistinctly paler; antennæ brownish at base; pubescence moderate, condensed at the base of the third elytral interval. Beak distinctly longer than the head and prothorax, cylindrical, evenly arcuate, feebly dilated near the base, rather strongly punctate throughout; supra antennal groove distinct. Antennæ not stout, first joint nearly or quite as long as the next two, and nearly reaching the eye, eighth as wide as long. Front punctate, without median sulcus; eyes moderate. Prothorax a little wider than long; sides rather strongly arcuate; basal margin expanded; apical constriction well marked, moderately closely punctate; basal fovea shallow, linear, nearly reaching the middle. Elytra about one-half longer than wide; sides feebly arcuate and subparallel in basal two-thirds; intervals flat, about one-half wider than the striæ. Abdominal punctuation moderately strong, not close, confined almost entirely to the first two segments; legs long, slender. Length 2.1-2.3 mm.; .08-.09 inch.

*Hab.*—Lower California (La Chuparosa).

Described from two examples, one of which, from the somewhat shorter beak and first antennal joint, I judge to be a male. *Elutipes* has no very near allies, but the tumid under body, thin legs and lack of secondary sexual characters evidently associate it with *decoloratum*, *emacipes* and *carinatum*.

92. **A. carinatum** Smith.—Rather stout, black throughout, or with the antennæ, tibiæ and tarsi more or less brownish piceous; pubescence fine, very sparse and inconspicuous. Beak stout, a little shorter than the head and prothorax, feebly dilated at basal third, thence narrowing a little toward the tip; surface variably punctate, usually quite coarsely, often subseriately at the sides; supra antennal groove distinct. Antennæ short, first joint scarcely as long as the two following, joints 6-8 transverse, the eighth strongly so, fourth reaching the eye. Front rather narrow, deeply bisulcate; eyes not prominent. Prothorax broader than long; sides subparallel and nearly straight in basal half, thence rather strongly narrowed and constricted before the apex; surface densely, rather coarsely punctate; basal fovea moderate. Elytra about one-third longer than wide; humeri prominent; sides arcuately divergent to the middle or a little beyond; striæ coarse; intervals narrow, strongly convex. Punctuation beneath variable, usually moderately coarse and close; legs thin. Length 1.5-1.8 mm.; .06-.07 inch.

*Hab.*—Massachusetts, New York, Pennsylvania, Florida, Louisiana.

As in the three preceding species, secondary sexual characters are practically wanting. In the width of the eighth antennal joint and convexity of the elytral intervals this species, I think, surpasses all others in our fauna. The types of *concoloratum*, both in the National Museum and in the LeConte cabinet, are identical with the types of



*carinatum* in the Smith collection, now owned by the National Museum.

93. **A. attenuatum** Smith.—Moderately elongate, black; pubescence rather thin, not appreciably more conspicuous beneath, somewhat condensed at the base of the third elytral interval. Beak equal to or a little shorter than the head and prothorax, rather stout, parallel, scarcely at all dilated, coarsely more or less rugosely punctate, especially at the sides. First joint of antennæ scarcely as long as the next two, outer joints transverse, second joint usually not reaching the eye. Front very little wider than the tip of the beak, punctate, not sulcate; eyes moderate. Prothorax rather more than two-thirds the width of the elytra at humeri, as long as wide; sides subparallel and straight or feebly arcuate in basal half, thence moderately narrowed and constricted. Punctures of surface usually shallow, of moderate size and not very close, but sometimes distinctly deeper, coarser and closer; basal fovea small, linear. Elytra more than one-half longer than wide; humeri moderately prominent; sides feebly arcuately divergent to behind the middle; intervals about one-half wider than the striæ, slightly convex. First two ventral segments moderately punctate, the others almost unpunctate; legs moderate. Length 1.7-2 mm.; .07-.08 inch.

*Hab.*—Michigan (Detroit), Ontario (Toronto), Illinois, Nebraska (Knaus), Texas (Brownville, Wickham), Oregon (Wickham), Southern California.

A species of wide distribution and exhibiting a moderate amount of variation in sculpture and proportion of parts. The Southern California examples especially vary from the above description in the longer, less coarsely punctate beak and more elongate basal joint of the antennæ. I do not, however, feel warranted in separating them.

94. **A. solutum** n. sp.—Elongate, parallel, black; legs red; pubescence conspicuous, condensed at the bases of the third elytral intervals. Beak rather stout, parallel, scarcely dilated, about as long as the head and prothorax (♂), somewhat longer (♀); surface finely sculptured nearly to the tip, superficially, more or less irregularly punctate throughout. Antennæ moderate, first joint about as long as the next two, second or third reaching the eye. Front substrate; eyes not prominent. Prothorax as long as wide, subcylindrical, moderately narrowed and constricted in front, the front margin somewhat thickened; surface moderately punctate. Elytra nearly twice as long as wide, about one-half wider than the prothorax; sides parallel; interval nearly flat, less than twice as wide as the striæ. Beneath not closely punctate; legs rather short, not slender. Length 2 mm.; .08 inch.

*Hab.*—Western Texas, New Mexico.

Described from three specimens in my own collection, kindly communicated by Captain Casey, and one each in the collections of Dr. Hamilton and Mr. Fuchs. In all the specimens the metasternum bears at the middle of the posterior margin a laterally com-

pressed tubercle. A similar structure has been noticed in *sordidum* and *curticorne*, and here, as well as in the two latter species, its presence seems independent of sex. In some examples the surface, especially of the elytra, is seen, when the pubescence is removed, to be quite highly polished; this, however, is not always the case. There are no sexual differences observable in the material at hand.

95. **A. disparipes** n. sp.—Moderately elongate, black; elytra with greenish lustre; anterior femora and all the tibiæ rufous; pubescence rather fine, not very conspicuous. Beak (♂) slender, a little shorter than the head and prothorax, cylindrical, not strongly arcuate, very feebly dilated, fine sculpture reaching nearly to the apex, which is moderately shining; punctuation rather strong and close, but not coarse. Antennæ rather short, first joint paler at base, about as long as the next two and not quite reaching the eye, 5-8 increasingly transverse, the club equal in length to the six preceding joints. Front punctate; eyes not very prominent. Prothorax a little wider than long, width a little behind the middle equal to the base; sides rather feebly arcuate behind the apical constriction; surface moderately strongly, closely punctate; basal fovea small, elongate. Elytra about one-half longer than wide, a little wider at the middle; humeri rather prominent; striæ not deep; intervals flat, at least twice as wide as the striæ. Beneath moderately punctate. Length 2 mm.; .08 inch.

♂. Sutural tips strongly rounded; first joint of middle and hind tarsi with an acute spiniform process; middle femora strongly incrassate.

♀. Not seen.

*Hab.*—New Mexico (Las Cruces).

Described from a single male in Dr. Hamilton's collection. Evidently allied to *spinipes*, but perfectly distinct, and withal one of the most remarkable species in our fauna.

96. **A. spinipes** n. sp.—Moderately elongate, black, rather sparsely pubescent. Beak nearly or quite as long as the head and prothorax, not stout, subcylindrical, not dilated, finely sculptured and dull almost to the apex, which is more or less shining; punctuation distinct, coarser at the sides. Antennæ more or less piceous brown at the base, first joint nearly as long as the next three, second reaching the eye. Front punctate, a little wider than the tip of the beak; eyes not prominent. Prothorax usually noticeably wider than long, sometimes as long as wide, widest in front of the base; sides moderately strongly arcuate behind the apical tubulation; punctuation moderate; basal fovea small. Elytra about one-half longer than wide, a little wider at the middle than at the humeri, which are rather prominent; intervals nearly flat or feebly convex, scarcely twice as wide as the striæ. Beneath neither coarsely nor closely punctate. Length 2-2.3 mm.; .08-.09 inch.

♂. First joint of middle and hind tarsi with a spiniform process; sutural angles rounded.

♀. Not seen.

*Hab.*—Arizona.

The shape of the thorax and width of the elytral intervals are subject to some variation. The middle femora are just visibly stouter. A specimen in Dr. Horn's collection bears an orange locality label (Fla.?).

97. **A. graciliforme** n. sp.—Very elongate, parallel, brown throughout, clothed not very densely with whitish scales, which are broader on the prothorax. Beak almost as long as the head and prothorax, cylindrical, feebly dilated. Antennæ stout, first joint a little paler. Prothorax a little wider than long; claws feebly toothed. Length about 1.8 mm.; .07 inch.

♂. First joint of middle tarsi armed with a spur; middle femora noticeably stouter.

♀. Not seen.

*Hab.*—Dakota.

Quite close to the following species, from which the above brief diagnosis will enable it to be distinguished. A single specimen in the National Museum placed with *parallelum*. The color may possibly be due to immaturity, but there are no other indications of it.

98. **A. extensum** Smith.—Elongate, black, conspicuously clothed with squamiform hairs, which are densely placed on the meso and metasternal side pieces. Beak not appreciably different in the sexes, subequal to the head and prothorax, evenly arcuate, cylindrical, not dilated and not at all attenuate when viewed laterally: surface finely strigose, except at apex; punctuation distinct, a little finer above and toward the tip. Antennæ moderately stout, picescent at base, first joint nearly as long as the three following, second reaching the eye, outer joints transverse. Front slightly wider than the tip of the beak, punctate; eyes feebly convex, not prominent. Prothorax about as long as wide, width at base about one-fourth greater than at the apex, and not greater than at just behind the middle; apical and basal constrictions evident; surface rather strongly, closely punctate; basal fovea small. Elytra narrow, subparallel; humeri small; intervals rather wide, feebly convex. Beneath deeply, rather coarsely and closely punctate; last tarsal joint projecting beyond the lobes of the third, a distance equal to their length; claws not strongly toothed. Length 2.2 mm.; .09 inch.

♂. First joint of middle tarsi prolonged in a spiniform process on the inner side.

♀. Middle tarsi not spined.

*Hab.*—Dakota (Bismarck).

Four examples taken by Mr. Wickham. A very distinct and easily recognizable species.

99. **A. parallelum** Smith.—Elongate, black, moderately pubescent. Beak (♂) rather strong, subequal to the head and thorax, feebly dilated, somewhat attenuate, finely sculptured almost throughout, sparsely punctate, without supra-

antennal groove; (♀) a little longer and less attenuate. Antennæ short, first joint equal to the next two (♂), or three (♀), joints 6-8 transverse, the eighth decidedly so, second passing the margin of the eye. Front punctate, not sulcate; eyes not very prominent. Prothorax as long as wide; base barely wider than the apex; sides feebly, evenly arcuate; apical constriction obsolete; basal sinuation wanting; surface strongly, moderately, closely punctate; a median impunctate line, which is incomplete and imperfectly defined; basal fovea present. Elytra narrow, nearly or quite without humeri; intervals not wide, convex. Beneath deeply and rather coarsely and closely punctate; metasternum shorter than the first ventral; sternal side pieces quite densely pubescent; claws with a small acute tooth. Length 1.4-2 mm.; .056-.08 inch.

♂. Sutural angles narrowly rounded; first joint of middle tarsi with an acute spiniform process.

♀. Sutural angles scarcely rounded; tarsi as usual.

*Hab.*—District of Columbia, New Jersey (Southernpart, Liebeck), Michigan (Detroit, Schwarz), Massachusetts (Blanchard), Illinois.

In some specimens the first antennal joint is quite conspicuously paler. A remarkably distinct little species by its lack of humeri, short metasternum and male characters. It perhaps most closely resembles *tenuiforme*, which agrees in size and general facies, and in the spined male tarsi, but differs rather widely in its moderate humeri, normal metasternum, nearly simple claws and incrassate middle femora of the male. Not common.

100. **A. aculeatum** n. sp.—Not robust, dull black; front legs often more or less pallescent; pubescence yellowish cinereous, rather conspicuous. Beak (♂) not very slender, moderately curved, shorter than the head and prothorax, dull, except in about the apical third, which is somewhat shining; punctuation fine above, coarser at the sides; (♀) a little more slender, slightly longer than the head and thorax, more finely punctate, the punctures at the sides tending to a serial arrangement, somewhat dilated at the extreme base in both sexes. First joint of the antennæ subequal to the two following and nearly or quite reaching the eye. Front narrow, scarcely wider than the tip of the beak, with two confluent lines of punctures; eyes not prominent. Prothorax a little wider than long, usually slightly wider at base than at the middle; basal and apical constrictions distinct; sides arcuate at the middle; punctuation rather fine and sparse; basal fovea evident. Elytra fully one-half longer than wide, subparallel; sides feebly arcuate; humeri moderate; intervals about twice as wide as the striæ, more or less convex. Beneath finely, sparsely punctulate; legs rather slender; claws rather feebly toothed. Length 1.6 mm.; .065 inch.

♂. Sutural angles rounded; first joint of middle tarsi with spiniform process.

♀. Sutural angles scarcely rounded; tarsi not spined.

*Hab.*—Texas (Brownsville), Mr. Wickham.

The transverse antennal fovea is a very exceptional character, and has been noticed in but two other species, viz., *persimile* and *fibulipes*.

101. **A. persimile** n. sp.—So exactly like the following species in nearly every particular, that reference need here only be made to the two points of divergence. In *fibulipes* the tarsal spine is longer and blunt at tip, and the eyes are broadly oval as usual; in *persimile* the tarsal spine is shorter and acute, and the eyes are plainly narrowed inferiorly. (Pl. V, fig. 19).

Several examples in the Zimmerman collection and one female in Dr. Horn's collection, presumably from the same source, are all that I have seen. The specimens bear no locality label, but are, without much doubt, from the South Atlantic Coast region.

102. **A. fibulipes** n. sp.—Moderately robust, entirely black; pubescence rather conspicuous, consisting of perfectly recumbent cinereous hairs, which are more or less squamiform, especially on the head, prothorax and lower surface; on the elytra they form a single, tolerably even line on each interval. Beak (♂) rather strong, shorter than the head and prothorax, feebly dilated close to the base, slightly narrowing to the tip; apex shining, otherwise dull and moderately punctate, the punctures larger and more irregular at the sides; (♀) very slightly longer and more slender. First joint of antennæ short, not as long as the next two, second a little longer than the third, first joint not reaching the eye. Front narrow, about as wide as the tip of the beak, with two confluent lines of punctures; eyes not prominent. Prothorax about one-third wider than long, widest at the base; sides arcuate between the apical and basal constrictions; basal margin somewhat expanded; surface moderately closely, though not densely punctate; basal fovea small. Elytra about one-half longer than the thorax, less than one-half wider than long, subparallel; humeri moderate; sides feebly arcuate in basal two-thirds; intervals convex; the hairs arising from the strial punctures are generally visibly shorter and not at all squamiform. Beneath moderately punctate; claws with a small tooth. Length 1.5–1.7 mm.; .06–.07 inch. (Pl. V, fig. 18.)

♂. First joint of middle tarsi with a long blunt process on the inner side.

♀. Middle tarsi not modified.

*Hab.*—Lower California (La Chuparosa).

There is not much sexual difference in the elytral tips. In addition to the differences stated in the table between this species and *aculeatum*, it may be added that the present species is considerably more robust, and the vestiture of the elytra consists of only a single line of stouter hairs on each interval, while in *aculeatum* the hairs are finer and more numerous. The two species are, however, closely related as is evident by the narrow front, feebly toothed claws, peculiar sexual characters, and a general similarity in form, size, sculpture and vestiture. The resemblance to *persimile* is excessively close, the difference being alluded to under that species.

103. **A. pyriforme** Smith.—Moderately robust, wider behind, æneopiceous; elytra reddish brown; suture darker; pubescence whitish, moderately conspicuous, condensed at the bases of the third elytral intervals and in a post-scutellar sutural spot, forming a more or less evident triangle. Beak thick, shorter than the head and prothorax, punctate and pubescent. Antennæ rather slender, first joint subequal to the next two, second about reaching the eye. Front narrower than the tip of the beak, with the two lines of punctures, which tend to coalesce; eyes not prominent. Prothorax as long as wide, subcylindrical, a little wider behind, moderately punctate, with a linear basal fovea. Elytra widening to behind the middle; humeri not prominent; striæ coarse; intervals rather strongly convex, wider than the striæ. Beneath moderately punctured; claws with a rather small tooth. Length 1.6-2 mm.; .065-.08 inch. (Pl. V, fig. 17).

*Hab.*—Arizona.

The females differ only by the slightly more slender, less pubescent beak. The peculiar coloration will at once separate *pyriforme* from anything else in our fauna. It seems thus far not to have been brought in by many of our collectors, all the specimens seen coming apparently from one source.

104. **A. lividum** Smith.—Ferruginous; legs yellowish; pubescence fine, sparse, yellowish. Beak (♂) a little shorter than the head and prothorax, feebly dilated at base and slightly narrowing toward the tip; (♀) as long as the head and prothorax, more slender, sparsely punctulate in both sexes, but smoother in the female. Antennæ inserted near the base, first joint but little longer than the second and nearly reaching the eye. Front narrower than the tip of the beak, with two lines of more or less confluent punctures; eyes rather prominent, more coarsely granulate than usual. Prothorax a little wider than long; sides just visibly converging to a little before the middle, then more suddenly narrowed and strongly constricted before the apex; surface moderately closely punctate; basal fovea small, punctiform. Elytra one-half longer than wide; humeri moderate; sides subparallel; intervals not much wider than the striæ, more or less convex. Beneath moderately punctate; legs slender. Length 1.6-1.8 mm.; .06-.07 inch.

*Hab.*—Florida.

Taken in some numbers, especially at Crescent City, by Messrs. Hubbard or Schwarz. In his description Smith compares this species with *turbulentum* on a basis of similarity in form. This is only true in a very superficial sense, as structurally there is little affinity between them. Though not very close, *lividum* must, by any scheme, be placed in the vicinity of *emacipes* and *carinatum*; its separation from these species here being merely for convenience in tabular arrangement. Its color will always be sufficient for its instant recognition.

105. **A. puritanum** n. sp.—Moderately elongate, wider behind, brown; the suture slightly darker; vestiture consisting for the most part of grayish hairs, which are coarser and condensed in the basal and apical regions, more especially in a curved line, posteriorly convex on each elytron before the middle, and in a transverse subapical band, between these the hairs are very fine and sparse, presenting the appearance of a wide median denuded fascia. In some examples the entire region behind the apical band is densely clothed with grayish white pubescence, with yellowish and reddish hairs intermixed. The sides of the meso and metasternum, as well as their side pieces, are also densely clothed in well-preserved examples. The beak is shorter than or equal to the head and prothorax (♂), distinctly longer (♀), parallel, feebly dilated, finely sculptured and rather dull nearly to the tip in both sexes. First antennal joint subequal to the next two (♂), or a little longer (♀), second (♂) or third (♀) reaching the eye. Front more or less canaliculate; eyes prominent. Prothorax nearly as long as wide, slightly wider behind; apical constriction feeble; basal almost wanting; surface moderately punctate; basal fovea small, elongate. Elytra about one-half longer than wide, widest behind the middle; humeri moderate; intervals not wide, somewhat convex. Beneath moderately punctate; tarsi rather stout; claws feebly toothed. Length 2.-2.4 mm.; .08-.096 inch. (Pl. V, fig. 16.)

*Hab.*—Massachusetts, Pennsylvania, New Jersey, District of Columbia, Illinois, Wisconsin.

There seems to be no sexual difference, other than in the length of the rostrum, nor in my experience is the abdomen ever deplexed at the tip in the male. The relation of this species to *herculanum* is referred to under that species.

106. **A. umboniferum** n. sp.—Of the same general facies as the preceding, but larger and a little more elongate. The beak is slightly more shining, the antennæ inserted nearer the base, the first joint reaching the eye. The sides of the thorax are a little more arcuate posteriorly, with a larger but shallow basal fovea. The base of the elytra is more diffusely clothed with pale hairs, which are not so obviously condensed at the base of the third interval, or along the suture, as is respectively the case in the preceding and following species. The sides of the body beneath are less densely pubescent, the elytral intervals are wider, and the fifth bears on the declivity a prominent callus. Length 3.-3.1 mm.; .12 inch.

Only five examples seen, and all from Maryland (Odeuton and Harper's Ferry).

There are no sexual differences observable, though it is probable that both sexes are present.

107. **A. herculanum** Smith.—Similar to the two preceding in general appearance, but differing from both by the rather strongly rounded sides of the prothorax, the shining beak and more strongly toothed claws. There are absolutely no external means of distinguishing the sexes. Length 2.5-2.9 mm.; .10-.12 inch. (Pl. V, fig. 15.)

*Hab.*—Massachusetts, New York, Pennsylvania, Michigan, West Virginia.

According to Dr. Hamilton, sometimes abundant in Western Pennsylvania "on *Viburnum acerifolium* going out of bloom, June."

For convenience of comparison I give below, in parallel columns, the characters of most use in the separation of the last three species:

<i>Puritanum.</i>	<i>Umboiferum.</i>	<i>Herculanum.</i>
Length 2-2.4 mm. ;	3-3.1 mm. ;	2.5-2.9 mm.
Beak conspicuously longer in the ♀, often shorter than the head and prothorax in the ♂ ;	Beak subequal? (sexes not yet separated) ;	Beak subequal in the sexes.
surface finely strigoso reticulate and dull almost throughout ;	fine sculpture rather less marked ; surface a little more shining ;	fine sculpture scarcely evident, except near the base ; surface polished and shining ;
color piceous brown throughout.	color piceous brown throughout.	color reddish brown ; base and extreme tip darker.
Second joint of antennæ (♂). third (♀) reaching the eye.	First joint of antennæ reaching the eye.	Slightly variable, first joint nearly but never quite reaching the eye.
Prothorax nearly as long as wide, widest at base ; apical constriction feeble, behind which the sides are nearly straight.	Prothorax somewhat intermediate in shape, but never with a well-marked basal contraction.	Prothorax more transverse ; apical constriction distinct ; sides well rounded and narrowed before the base, which is not wider, if as wide, as near the middle.
Basal fovea small, narrow.	Basal fovea much larger, shallow, more vague.	Basal fovea as in <i>puritanum</i> .
Elytra less elongate.	Elytra more elongate.	Elytra less elongate.
Pubescence most noticeably condensed at base on third interval.	Pubescence more diffuse at base, not conspicuously condensed on either the sutural or third interval.	Pubescence most noticeably condensed at base along the suture.
Darker subapical sutural spot not or scarcely evident.	Subapical sutural spot conspicuous.	Subapical sutural spot conspicuous.
Posterior callus feeble or wanting.	Posterior callus prominent.	Posterior callus feeble.
Claws feebly toothed.	Claws feebly toothed.	Claws more strongly toothed.

The color is, in some degree, variable in all, but *puritanum* is, as a rule, darker than the other two. I am well aware that the creating of two new species at the expense of *herculanum* will seem to some of doubtful propriety, and I must confess that I hesitated long



before deciding on the course here pursued. It were certainly much simpler to set everything down to variation of one sort or another, but the differences seem too many and too constant to justify such a proceeding. A careful study of localities and dates in the large material at hand shows, that with a solitary exception, there has been no instance of the taking of any two forms at the same time and place; the single exception being the occurrence of a specimen each of *umboniferum* and *herculanum* on the same day, May 19th, at Harper's Ferry, West Virginia, a fact which may signify relationship or the reverse, according to circumstances.

108. **A. xanthoxyli** n. sp.—Very robust, strongly gibbous when viewed in profile, brown, clothed throughout with whitish, pale brown and blackish scales, which are unevenly distributed upon the elytra. Beak not very stout, subequal in length to the head and prothorax, rather prominently, but not very strongly dilated near the base, slightly attenuate beyond the dilatation; surface more or less shining, moderately punctate about the insertion of the antennæ, more finely and remotely toward the tip, which is polished. Antennæ stout, inserted near the base, first joint as long as the next two and reaching the eye, eighth transverse. Front with two rows of punctures and a more or less evident channel between them; eyes prominent, the vertical diameter exceeding the horizontal more than is usual. Prothorax a little wider at the base than long, conical; sides nearly straight; a feeble apical constriction; surface not very closely nor coarsely punctate; basal fovea wanting. Elytra strongly, longitudinally convex, more suddenly declivous behind, not much longer than wide; humeri strong; sides somewhat diverging to the middle; striæ coarse; intervals about one-half wider, nearly flat at their summits; vestiture condensed in a basal area, reaching the humeral umbones and emarginate at the suture; the scales pale brownish, whiter along the posterior border; on the second, fourth and sixth intervals there are small condensed spots of pale scales, forming a transverse row behind the middle, between which and the basal patch the scales are blackish; the first, third and fifth intervals, as well as the sides and apex, are clothed with brownish white scales, varying slightly in shade. Beneath rather sparsely punctate; legs short, stout, first tarsal joint as wide as long, second transverse; claws with a rather blunt tooth. Length 1.8-2.1 mm.; .07-.084 inch. (Pl. V, figs. 14 and 14a.)

*Hab.*—Texas (Brownsville and San Diego).

Numerous specimens were taken by Mr. Schwarz at San Diego, where it was found breeding in the seeds of *Xanthoxylum pterota*. The sexes are scarcely separable. A very peculiar species and quite unlike anything else in our fauna, though evidently allied to certain tropical American forms, more especially to *A. gibbosum* Sharp, of Mexico.

I have been pleased to use the specific name suggested by Mr. Schwarz.

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The original descriptions (except in *nodirostre* and *vile*, where Smith's translations are used) of the unrecognized species are here appended :

**A. nodirostre** Gerst., Stett. Ent. Zeit., 1854, 261.—Oblong, black, sub-æneous, slightly pubescent; rostrum dilated near middle, above canaliculate; front trisulcate; antennæ short, stout. Head grossly punctured; thorax sub-cylindrical, narrowed anteriorly, finely punctured, as long as broad, sides equal; elytra black, æneous, striate and punctured; interstices subconvex and shining; humeri prominent; legs piceous. Length 1-1½ lines.

*Hab.*—Florida.

**A. vile** Gerst., loc. cit., 249.—Elongate, black, not pubescent, shining; rostrum elongate, slightly arcuate, densely punctate at base; antennæ inserted close to the eyes, base piceous. Head finely granulate, sulcate between the eyes; eyes small, not prominent; thorax nearly as wide as long; side parallel, slightly narrower at apex; base bisinuate, sparsely punctate, foveate at base; elytra elongate, ovate; at base one-half broader than thorax; sides parallel to terminal third; striæ punctate; intervals convex, finely scabrous; legs black, thin; anterior tibia elongated. Length ¾ line.

*Hab.*—Baltimore.

**A. subglobosum** Gerst., loc. cit., p. 243.—Breve, obscure æneum, subtilissime griseo pubescens, rostro brevior, arcuato, fronte canaliculato, thorace transverso, lateribus ampliato, apicem versus attenuato, postice bisinuato, supra minus crebre punctato, canaliculato, elytris subglobosis, punctata sulcatis, interstitiis convexis; subtiliter punctulatis. Long. (rostr. excl.) ⅔ lin.

Der Körper ist kurz und gedrungen, schwarz, sehr fein und sparsam, graw behaart, die oberseite dunkel erzfarbig. Der Rüssel ist ziemlich kurz, gebogen, sehr fein und sparsam punktirt, matt glänzend. Die Fühler sind dicht vor den Augen dicht und tief punktirt, in der Mitte mit einer deutlichen Längsrinne; die Augen sind gross und ziemlich hervortretend. Das Halsschild ist um ein Drittheil kürzer als an der Basis breit, an den Seiten nach hinten gerundet erweitert vorn verengt und eingeschnürt, aus Hinterrande zweibüchtig; die oberfläche nicht sehr dicht und etwas nuregelmässig punktirt, vor dem Schildchen mit einer abgekürzten Mittelrinne. Das Schildchen ist klein, rundlich. Die Flügeldecken sind kurz und breit, fast kugelartig gewölbt, an den Seiten gerundet erweitert, nach hinten schnell verengt und abgerundet, doch so, dass von oben gesehen die Spitze etwas aus dem Kreisbogen nach hinten hervortritt; die oberfläche ist tief punktirt gefurcht, die Zwischenräume deutliche gewölbt, sehr fein punktirt. Die Beine sind massiglang und stark, schwarz, fein behaart.

Aus Nordamerika (Mus. Berol.).

**A. cuprescens** Mann., Bull. Mosc., 1843, 289.—Oblongum, fusco æneum, griseo pubescens, rostro longitudine thoracis cum capite, arcuato, thorace antèrius angustato, profunde punctato, postice canaliculato; elytris oblongo ovatis, punctato sulcatis, punctis, in sulcis satis approximatis. Longit. cum rostro  $1\frac{1}{2}$  lines, Latit.  $\frac{1}{2}$  lin.

*Hab* —In insula Sitkha.

**A. reconditum** Gyll., Sch. Curc., V, 432.—Oblongo ovatum, nigro æneum, subnitidum glabrum; thorace sub-conico, obsolete punctato, non canaliculato; elytris amplis, remote punctato sulcatis; interstitiis planis, sublævibus; rostro tenui arcuato. Rostrum longius magis tenuè arcuato, cuput breve, latum, atrum, fronte impressa punctulata, vertice elevato sublævi; oculi semi-globosi, nigri; rostrum longitudine capite cum thoracis tenuè, cylindricum, atrum nitidum. Antennæ mediocres, nigræ. Thorax latitudine baseos fere longior, antèrius angustior, sub-conicus, apice truncatus lateribus obliquus vix ampliatus; basi leviter bisinuatus, supra modice convexus, obsolete punctatus, postice non canaliculatus nigro æneus, subnitidus; scutellum tuberculiforme, atrum. Elytra ampla, antice thoracis basi fere duplo latiore, humeris rotundatis, callosè elevato instructis; lateribus pone medium adhuc nonnihil latioribus, apice conjunctim rotundato, thorace triplo longiora, supra convexa sat profunde sulcata, sulcis remote punctatis, atrum, parum nitidum. Pedes longiusculi, validi, atri, tarsi cinereo pubescentibus.

*Hab.*—Pennsylvania.

#### PODAPION.

This genus was erected by Prof. Riley, Bull. Brooklyn Ent. Soc., VI, p. 61, for the reception of a singular Apionid bred from galls on two-year old twigs of *Pinus inops*. For a description of this insect (*P. gallicola* Riley) and its habits, the student should consult the above reference.

The structural characters used as a basis for generic separation by Prof. Riley are slight, as he virtually admits when he says "Where such uniformity obtains in a group (Apioninæ), characters may be considered generic which otherwise would have doubtful generic value." The greater width of the tarsal joints seems to have been the chief character relied upon, and this, indeed, is the only one mentioned by Prof. Smith in his Synopsis. Further experience shows that this distinction does not hold good; the proportions of the tarsal joints in *Apion* vary widely, and in one species at least, *A. xanthoxyli*, the joints are quite as strongly dilated as in *gallicola*. *Podapion* does, however, depart so much in size and general facies from all the rest of our *Apionids* that much less radical structural divergence is necessary than if habitual peculiarities were slight or wanting; and while the tarsi fail to yield the evidence desired, I have observed two other differences which seem to me to meet the requirements.

In *Podapion* the antennal club is relatively very small, with the last joint much shorter than either of the two preceeding. In *Apion* the last joint of the club is always distinctly longer than the one preceding and constitutes at least one-third the length. Again, the front thighs are conspicuously stouter than the others in *Podapion*, never so in *Apion* (the peculiar sexual modifications of the front thighs of certain males of Section I cannot properly be cited as an exception). It may be said that the middle coxæ are more narrowly separated than usual, though certain species of *Apion*, e. g. *herculanium*, approach it in this respect. The claws are nearly simple, there being merely a slight basal angulation, which is more evident in the anterior pair. There seem to be no sexual differences, except the very slightly longer and smoother beak of the female.

Mr. Blanchard writes me that he has beaten *Podapion* from pitch pine, *Pinus, rigida*, on which it had undoubtedly bred; *P. inops* not occurring there (Lowell, Mass.).

Specimens are recorded from District of Columbia, Massachusetts, Michigan. Smith also adds H. B., Arkansas, Florida.

Since writing the above I have seen a specimen from California (Placer County), in the collection of Mr. Van Dyke, of Soldiers' Home, California. Truly an insect of extraordinary distribution.

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## Bibliography and Synonymy.

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### APION Hbst.

1. *A. erraticum* Smith., Trans. Am. Ent. Soc., 1884, p. 44; *estriatum* ♀ Smith. loc. cit., p. 47.
2. *A. impeditum* n. sp.
3. *A. quadricolle* n. sp.
4. *A. protensum* Lec., Pac. R. R. Expl. and Surveys Ins. 53; Smith, loc. cit. p. 46.
5. *A. impunctistriatum* Smith, loc. cit., p. 48.
6. *A. coracellum* n. sp.
7. *A. anceps* n. sp.
8. *A. atripes* Smith, loc. cit., p. 49.
9. *A. finitimum* n. sp.
10. *A. virile* n. sp.
11. *A. melanærium* Gerst., Stett. Ent. Zeit, 1854, p. 261; Smith. loc. cit., p. 50.
12. *A. floridanum* Smith, loc. cit., p. 49.

13. *A. robustum* Smith, loc. cit., p. 45; *obesum* ♀ Smith, loc. cit., p. 49.
14. *A. obsoletum* Smith, loc. cit., p. 44; *ovale* ♀ Smith, loc. cit., p. 47.
15. *A. ellipticum* Smith, loc. cit., p. 51.
16. *A. desolatum* Smith, loc. cit., p. 48.
17. *A. sinuirostrum* n. sp.
18. *A. molestum* n. sp.
19. *A. minutum* Smith, loc. cit., p. 50; *parvulum* Smith, loc. cit., p. 49.
20. *A. texanum* Smith, loc. cit., p. 51.
21. *A. pennsylvanicum* Boh., Sch. Curc., V, 417; Smith, loc. cit., p. 50; *erythrocerum* Smith, loc. cit., p. 44.
22. *A. funereum* n. sp.
23. *A. occidentale* n. sp.
24. *A. hesperum* n. sp.
25. *A. perminutum* Smith, loc. cit., p. 59.
26. *A. reclusum* n. sp.
27. *A. punctinasum* Smith, loc. cit., p. 46.
28. *A. curticorne* n. sp.
29. *A. sordidum* Smith, loc. cit., p. 48; var. *californicum* Smith, loc. cit., p. 52; *vespertinum* Casey, Bull. Brooklyn Ent. Soc., Vol. VII, p. 67.
30. *A. tenuiforme* n. sp.
31. *A. acrophilum* n. sp.
32. *A. antennatum* Smith, loc. cit., p. 53.
33. *A. œdorhynchum* Lec., Proc. Acad. Nat. Sci., Phila., 1858, p. 78; Smith, loc. cit., p. 50.
34. *A. opacicolle* Smith, loc. cit., p. 50.
35. *A. coxale* n. sp.
36. *A. tenuirostrum* Smith, loc. cit., p. 62.
37. *A. æneipenne* Smith, loc. cit., p. 61.
38. *A. impexum* n. sp.
39. *A. metallicum* Gerst., Stett. Ent. Zeit., 1854, p. 243; Smith, loc. cit., p. 61.
40. *A. troglodytes* Mann., Bull. Mosc., 1843, II, p. 289; Smith, loc. cit., p. 61.
41. *A. propinquicorne* n. sp.
42. *A. modestum* Smith, loc. cit., p. 58.
43. *A. subtinatum* n. sp.
44. *A. pervicax* n. sp.
45. *A. gulare* n. sp.
46. *A. proclive* Lec., Pac. R. R. Expl. and Surveys, Ins. 53; Smith, loc. cit., p. 58.
47. *A. chuparose* n. sp.
48. *A. grossulum* n. sp.
49. *A. patrule* Smith, loc. cit., p. 64.
50. *A. walshii* Smith, loc. cit., p. 57; *lanuginosum* || Walsh, Proc. Ent. Soc., Phila., 1867, p. 269; *vicinum* Smith, loc. cit., p. 58.
51. *A. abdominale* Smith, loc. cit., p. 53.
52. *A. perforicolle* n. sp.
53. *A. novellum* n. sp.
54. *A. nebraskense* n. sp.
55. *A. minor* Smith, loc. cit., p. 56.
56. *A. turbulentum* Smith, loc. cit., p. 56.
57. *A. importunum* n. sp.

58. *A. griseum* Smith, loc. cit., p. 59; *fraternum* Smith, loc. cit., p. 60.
59. *A. dolosum* n. sp.
60. *A. æquabile* n. sp.
61. *A. carinirostrum* n. sp.
62. *A. peninsulare* n. sp.
63. *A. cribricolle* Lec., Pac. R. R. Expl. and Surveys, Ins. 53; *brevicolle* Smith, loc. cit., p. 53.
64. *A. porcatum* Boh., Sch. Curc., V, p. 374; Smith, loc. cit., p. 64.
65. *A. centrale* n. sp.
66. *A. rostrum* Say, Jour. Acad. Nat. Sci. Phila., V, 253; ed. Lec., II, p. 316; Curc., p. 6; ed. Lec., I, p. 264; *Sayi*, Gyll., Sch. Curc., I, p. 252; Harris, Inj. Insects, ed. ult. (larva); Smith, loc. cit., p. 63.
67. *A. coloradense* n. sp.
68. *A. nigrum* Hbst., Käfer, VII, p. 122, pl. 103, fig. 11; Germar, Magazin, II, p. 239; Gyll., Sch. Curc., I, p. 254; Smith, loc. cit., p. 64.
69. *A. cordatum* Smith, loc. cit., p. 54.
70. *A. oblitum* Smith, loc. cit., p. 54; *capitatum* Smith, loc. cit., p. 54.
71. *A. furtivum* n. sp.
72. *A. commodum* n. sp.
73. *A. confertum* Smith, loc. cit., p. 63.
74. *A. auripes* n. sp.
75. *A. cavifrons* Lec., Pac. R. R. Expl. and Surveys, Ins. 53; Smith, loc. cit., p. 63.
76. *A. huron* n. sp.
77. *A. varicorne* Smith, loc. cit., p. 60.
78. *A. alternatum* n. sp.
79. *A. contusum* Smith, loc. cit., p. 61.
80. *A. nasutum* n. sp.
81. *A. segnipis* Say, Curc., p. 6; ed. Lec., I, p. 264; Smith, loc. cit., p. 59.
82. *A. arizonæ* n. sp.
83. *A. fumitarse* n. sp.
84. *A. filum* n. sp.
85. *A. ventricosum* Lec., Proc. Acad., 1858, p. 78; Smith, loc. cit., p. 55; *typicum* Smith, loc. cit., p. 53.
86. *A. subornatum* n. sp.
87. *A. dilatatum* Smith, loc. cit., p. 56.
88. *A. crassum* n. sp.
89. *A. decoloratum* Smith, loc. cit., p. 52.
90. *A. emaciipes* n. sp.
91. *A. elutipes* n. sp.
92. *A. carinatum* Smith, loc. cit., p. 52; *concoloratum* Smith, loc. cit., p. 52.
93. *A. attenuatum* Smith, loc. cit., p. 62.
94. *A. solutum* n. sp.
95. *A. desparipes* n. sp.
96. *A. spinipes* n. sp.
97. *A. graciliforme* n. sp.
98. *A. extensum* Smith, loc. cit., p. 61.
99. *A. parallelum* Smith, loc. cit., p. 47.
100. *A. aculeatum* n. sp.

101. *A. persimile* n. sp.  
 102. *A. fibulipes* n. sp.  
 103. *A. pyriforme* Smith, loc. cit., p. 57.  
 104. *A. lividum* Smith, Entom. Amer., 1887, p. 56.  
 105. *A. puritanum* n. sp.  
 106. *A. umboniferum* n. sp.  
 107. *A. herculanum* Smith, loc. cit., p. 56.  
 108. *A. xanthoxyli* n. sp.

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*Unidentified species.*

- A. nodirostre* Gerst., Stett. Ent. Zeit., 1854, p. 261.  
*A. vile* Gerst., *ibid.*, p. 249.  
*A. subglobosum* Gerst., *ibid.*, p. 243.  
*A. cuprescens* Mann., Bull. Mose., 1843, p. 289.  
*A. reconditum* Gyll., Sch. Curc., V, 432.
- 

EXPLANATION OF PLATE II.

- Fig. 1.—*A. erraticum*; 1a, basal joints of antennæ ♂ ♀.  
 “ 2.—*A. quadricolle*; 2a. “ “ “ “ ♀.  
 “ 3.—*A. impunctistriatum*; 3a, antennæ ♂.  
 “ 4.—Left anterior femur as seen from above of *A. impeditum* ♂.  
 “ 5.— “ “ “ “ “ *A. impunctistriatum* ♂.  
 “ 6.— “ “ “ “ “ *A. finitimum* ♂.  
 “ 7.— “ “ “ “ “ *A. melanarium* ♂.  
 “ 8.— “ “ “ “ “ *A. desolatum* ♂.  
 “ 9.— “ “ “ “ “ *A. pennsylvanicum* ♂.  
 “ 10.— “ “ “ “ “ *A. occidentale* ♂.  
 “ 11.—Anterior femur of any female of Section I.  
 “ 12.—Abdomen coarsely, closely punctate—*A. erraticum, impeditum, etc.*  
 “ 13.—Abdomen more sparsely, finely punctate—*A. atripes, melanarium, etc.*  
 The difference is not always so strongly marked as in the figures.  
 “ 14.—Anterior tibia ♂, usual form, Section I.  
 “ 15.— “ “ of *finitimum* ♂.  
 “ 16.— “ “ of female, practically the same in all species.  
 “ 17.—Posterior tibiæ ♂, usual form, Section I. The female differs only in lacking the mucro.  
 “ 18.—*A. atripes*.  
 “ 19.—Claw of *A. impunctistriatum*.  
 “ 20.—Same of *A. funereum*.  
 “ 21.—*A. sinuistrostrum*.  
 “ 22.—*A. melanarium*.  
 “ 23.—*A. hesperum*.  
 “ 24.—Tip of elytra (♂ ♀) of *A. pennsylvanicum*.  
 “ 25.—*A. occidentale*.

## EXPLANATION OF PLATE III.

- Fig. 1.—*A. perminutum* : 1a, basal joints of antennæ.  
 “ 2.—*A. reclusum* ; 2a, “ “ “ ♂.  
 “ 3.—*A. punctinatum* ♂ ; 3a, tarsus.  
 “ 4.—*A. curticornis* ; 4a, head and antennæ (♀) of same.  
 “ 5.—*A. tenuiforme* ; 5a, middle tarsus ♂.  
 “ 6.—*A. sordidum* ; 6a, tarsus.  
 “ 7.— “ var. (Arizona).  
 “ 8.— “ var. *californicum* : 8a, tarsus.  
 “ 9.—*A. ædorhynchum* ♂.  
 “ 10.—*A. antennatum* ♂.  
 “ 11.—Front tibia of *antennatum* ♂.  
 “ 12.— “ “ *acrophilum* ♂.  
 “ 13.—Claw of *reclusum*, *punctinatum*, etc.  
 “ 14.— “ “ *perminutum*, *acrophilum*, etc.  
 “ 15.— “ “ *ædorhynchum* and *antennatum*.

## EXPLANATION OF PLATE IV.

- Fig. 1.—Prothorax not sinuate before the basal margin (*A. tenuirostrum*).  
 “ 2.—Prothorax sinuate posteriorly ; base as wide or wider than the middle (*A. pervicax*).  
 “ 3.—Prothorax sinuate posteriorly ; base narrower than the middle (*A. cordatum*).  
 “ 4.—Usual shapes of claws in Section III.  
 “ 5.—Thorax of *A. metallicum*.  
 “ 6.— “ “ *A. troglodytes*.  
 “ 7, 7a.—*A. propinquicorne* ♂.  
 “ 8, 8a.—*A. modestum* ♂.  
 “ 9, 9a, 9b.—*A. proclive* ♂.  
 “ 10.—Head of *A. minor* ♂ ; 10a same ♀.  
 “ 11, 11a.—*A. patruelle* ♂.  
 “ 12, 12a.—*A. walshii* ♂ ; 12b head ♀.  
 “ 13.—*A. abdominale*.  
 “ 14.—Mucro of posterior tibia ♂, *A. pervicax*.  
 “ 15.— “ “ “ *A. proclive*.  
 “ 16.— “ “ “ *A. chuparosæ*.  
 “ 17.— “ “ “ *A. patruelle*.  
 “ 18.— “ “ “ *A. walshii*.  
 “ 19.— “ “ “ *A. novellum*.  
 “ 20.— “ “ “ *A. nebraskense*.  
 “ 21.—Posterior margin of antennal fovea angulate.  
 “ 22.— “ “ “ “ not angulate.

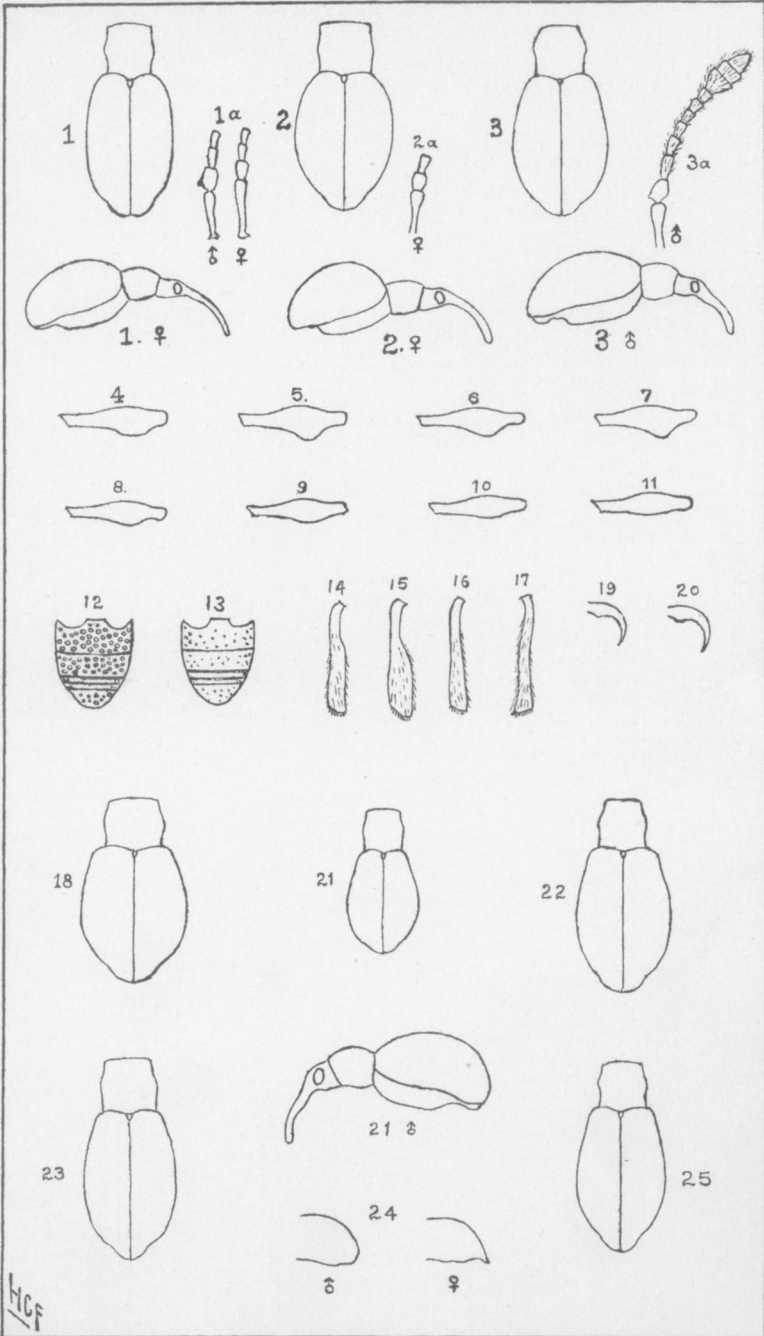


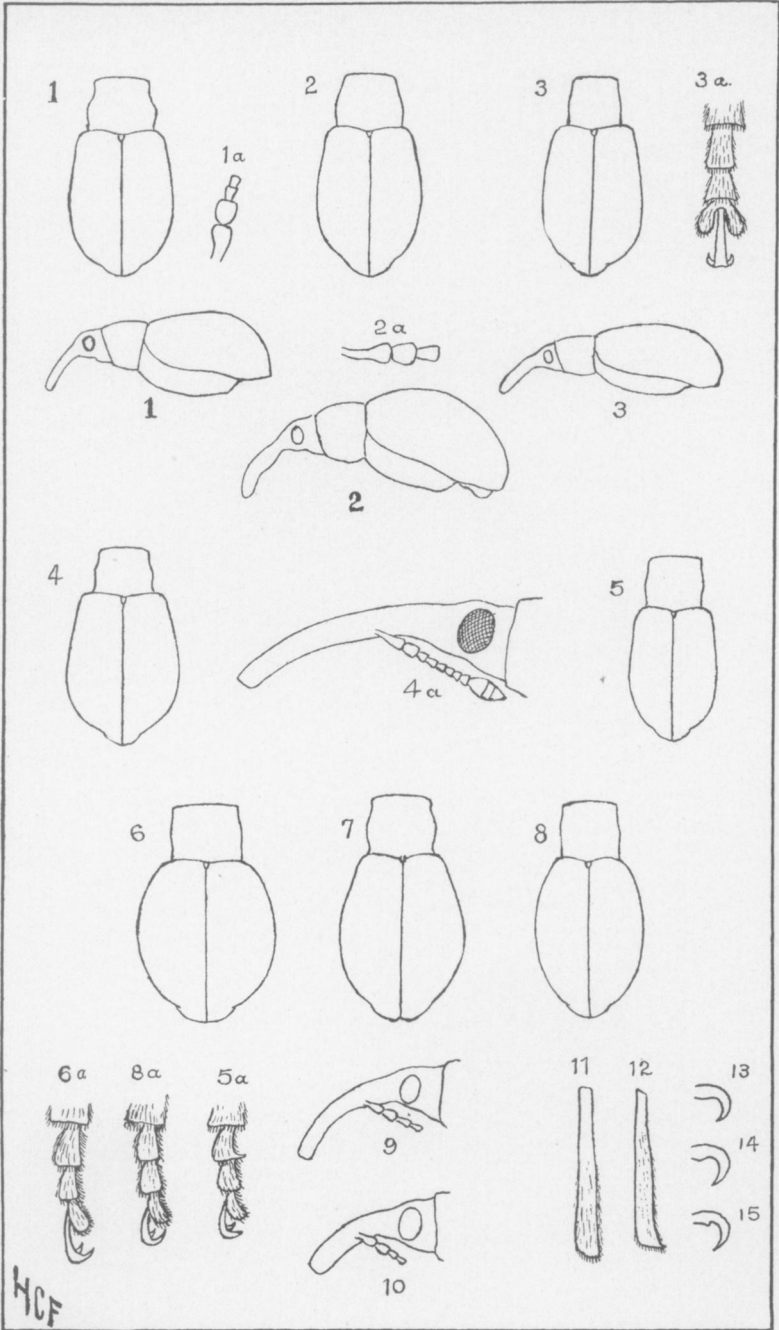
## EXPLANATION OF PLATE V.

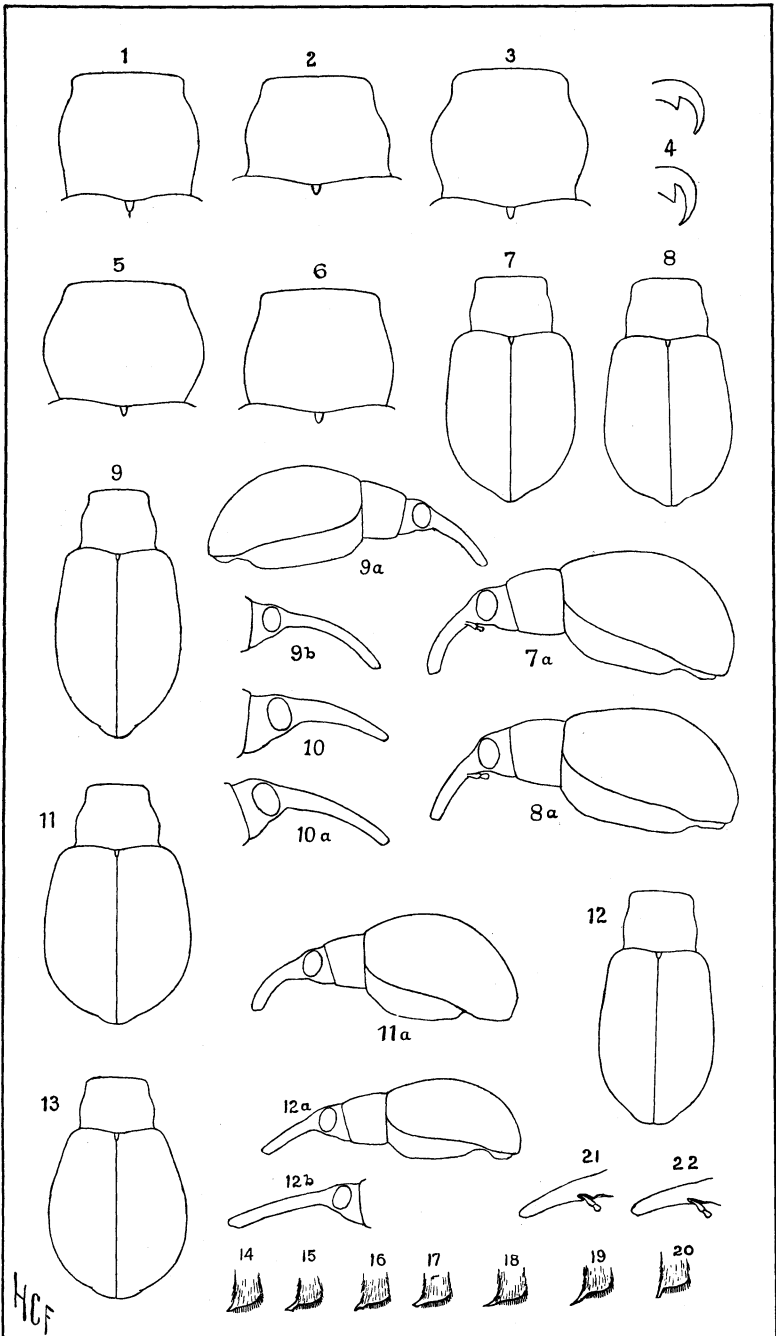
- Fig. 1.—*A. perforicolle*.  
 “ 2, 2a.—*A. peninsulare*.  
 “ 3, 3a.—*A. cribricolle*.  
 “ 4.—Head and beak of *A. varicornæ* ♂; 4a same of var. b, ♀.  
 “ 5.— “ “ “ “ *A. alternatum*.  
 “ 6.—*A. fumitarsæ* ♀.  
 “ 7.—*A. segnipēs* ♀; 7a same head and beak ♂.  
 “ 8.—Head and beak of *A. arizonæ* ♂.  
 “ 9, 9a.—*A. flum*.  
 “ 10.—*A. emaciipēs*; 10a thorax of same.  
 “ 11.—Thorax of *A. crassum*; 11a beak of same from above.  
 “ 12, 12a.—*A. ventricosum*.  
 “ 13.—Thorax of *A. decoloratum*.  
 “ 14, 14a.—*A. xanthozylī*.  
 “ 15.—*A. herculanum*.  
 “ 16.—*A. puritanum*.  
 “ 17.—*A. pyriforme*.  
 “ 18.—First joint of middle tarsi ♂, *A. fibulipes*.  
 “ 19.— “ “ “ “ *A. persimile*.

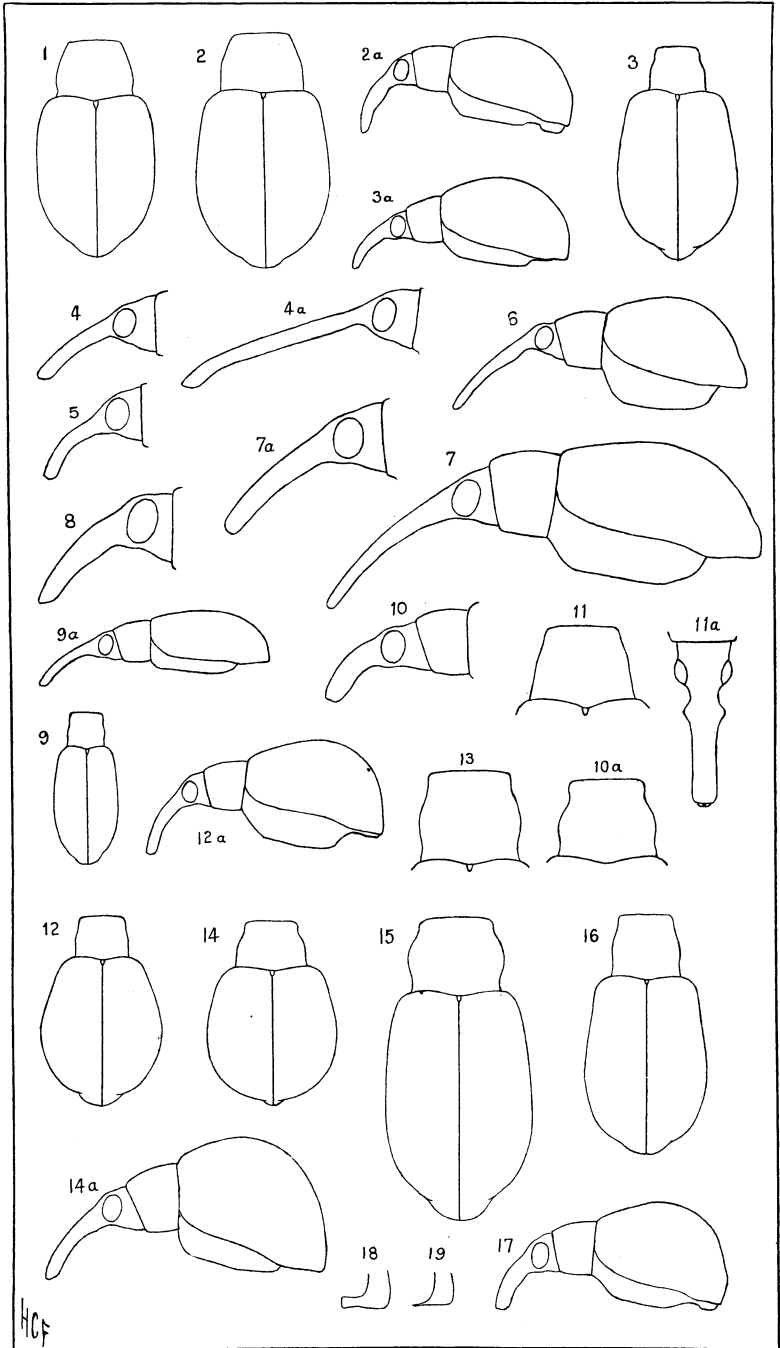
## ERRATA.

- Page 106, line 25, for Herbst-Käfer read Herbst, Käfer.  
 “ 112, lines 5 and 6, move one em to right  
 “ 112, lines 7 and 9 from bottom, move four ems to right.  
 “ 112, line 26, for nor read not.  
 “ 112, lines 26, 28-33, move one em to right.  
 “ 113, line 4, move two ems to left.  
 “ 124, line 24, for subdental read subdentate.  
 “ 124, line 32, after generally add not.  
 “ 129, line 4, for dipterousgal ls read dipterous galls.  
 “ 129, line 29, after otherwise add as.  
 “ 132, lines 7 and 8, move two ems to right.  
 “ 132, lines 1, 3 and 4 from bottom, move two ems to right.  
 “ 147, line 8, add a comma after southeast.  
 “ 166, line 1, for n. sp. read Smith.









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## ERRATA.

Page 172, line 27, for wider than long *read* longer than wide.

“ 174, line 23, for *deplexed read* deflexed.

See page 184.